

Designing a Citizen Science Platform for Venice



December 11, 2020

Team Members:
Isabel Alvarado Blanco Uribe
Frank D'Alessio
Evan Davis
Tess Flaherty

Advisors:
Professor Fabio Carrera
Professor Jennifer deWinter

Website:
<https://sites.google.com/view/ve20-vcsp/>
Email:
gr-ve20-vcsp@wpi.edu

This report represents the work of WPI undergraduate students submitted to the faculty as evidence of completion of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review. For more information about the projects program at WPI, please see <http://www.wpi.edu/academics/ugradstudies/project-learning.htm>

Table of Contents

1. Citizen Science in Venice	1
2. What Citizen Science Is	2
2.1 Types of Citizen Science	2
2.1.2 Classification	2
2.1.1 Data Collection	2
2.2 Citizen Science Benefits	3
2.2.1 Increased Quantity of Research	3
2.2.2 Increased Quality of Research	3
2.2.3 Citizen and Community Advancement	3
2.3 Citizen Science in Venice	4
2.3.1 Research Into Citizen Science’s Potential	4
2.3.2 Citizen Science in Venice’s Lagoon	4
2.3.3 Efforts by Venice Calls	6
2.3.4 Efforts by WPI, the Venice Project Center	6
2.4 Enhancing Communication Between Science and the Community	7
2.4.1 Emergence of Citizen Science Platforms	7
2.4.2 The Importance of Data Visualizations in Science Communication	7
3. The Process To Produce The Design	9
3.1 User Identities and Features of the Citizen Science Platform	9
3.2 Adapt and Adopt Features from Existing Platforms	10
3.3 Iteratively design the citizen science platform	11
4. The Venice Citizen Science Website	12
4.1 Organizer	13
4.2 Volunteer	15
4.3 Scientists and Government Officials	18
4.4 Journalists and Citizens	20
5. Concluding Thoughts On The Design	25
6. Recommendations for Future Development	26
6.1 Data Visualizations	26
6.2 User Engagement	27
References	28
Appendices	31
Appendix A - Platform Comparison Rubric	31
Appendix B - Scores of Citizen Science Projects -	32
Appendix C - Interview Questions for Professor DeWinter	32
Appendix D - Interview Questions for Venice Calls	32
Appendix E - Interview Questions for Professor Harrison	33
Appendix F - The Application: Visitor View	34
Appendix G - The Application: Logged In View	56
Appendix H - The Application: Mobile View	68

1. Citizen Science in Venice

There are many different definitions of citizen science but the unifying theme is public participation in scientific research (Socientize Consortium, 2013). Citizen science allows for more data collection than one team of scientists could accomplish alone. Citizen science can help researchers study complex topics such as climate change, which cover immense spatial and temporal scales (Dickinson et al., 2010).

In Venice, Italy, citizen science is a rising field of interest. Higher Education Institutions, such as the Venice International University and the Ca' Foscari University of Venice, have begun studying the role citizen science plays in research (Venice International University, n.d.; Ca' Foscari University of Venice, 2020b). Within the community itself, citizen science projects focus on the conservation and preservation of the lagoon, an intrinsic piece to Venice's culture, art, and history (UNESCO, n.d.). One citizen science project enabled scientists to identify a new species of jellyfish and monitor invasive species in the lagoon (PERSEUS, n.d.). Another project, which occurred during the COVID-19 lockdown, asked Venetians to submit photos of the lagoon, canals, flora and fauna so the Ca' Foscari University (2020a) could analyze the effects of a reduced human presence.

The sponsor of our project, Venice Calls, plays an important role in the engagement of young people with the Venetian community at large. Their projects address environmental, social, and economic issues in the city by organizing social projects, events, conferences, emergency actions, and hackathons with the community. Their goal through these projects is to raise awareness and share experiences with Venetians (Venice Calls, n.d.). Last year, Venice Calls and Worcester Polytechnic Institute (WPI) collaborated on a project called "Plastic Free Venice: Quantifying and Mapping Plastic Pollution" in 2019. Together, they developed methods for reducing pollution and improving waste management efficiency (Bonanno et al., 2019).

Thus far, all of the very commendable citizen science efforts in Venice have not been coordinated and widely shared. A single comprehensive platform where all users can discover and participate in citizen science projects operating in the Lagoon could stimulate collaboration between organizations and help ensure Venice's culture and history last for years to come.

In addition to being a central hub for citizen science projects in the Lagoon, a platform could also provide useful visualizations of data gathered throughout the various projects. These visualizations would make the data more accessible to everyone. Having accurate information would inform both day-to-day decisions as well as long term policy. Research has shown that building local awareness through participation and decision-making will contribute to buy-in and better agreement on solutions (Socientize Consortium, 2013; Den Broeder, 2018). Data visualizations have also proved to be the key to understanding data and informing citizens on the progress of citizen science projects (Trafton, 2014).

To that end, the goal of this project is to design a digital platform for promoting and visualizing citizen science projects that address environmental, social, and economic problems in Venice. We identified user types and user journeys, analyzed features in existing platforms, and used the Iterative Design Process to refine our design. We finished with recommendations for design improvements and platform development. We hope our project will contribute to future citizen science efforts in Venice and its Lagoon.

2. What Citizen Science Is

Citizen science is the public participation in scientific research (Socientize Consortium, 2013). This chapter details the types of citizen science, the benefits of citizen science, the current citizen science projects happening in Venice.

2.1 Types of Citizen Science

There are three main ways citizens contribute to citizen science projects: classification, data collection, and instrumentation. Existing citizen science platforms like Zooniverse and iNaturalist focus on one type of citizen science (classification and data collection respectively) but our platform will be flexible enough to house all three.

2.1.2 Classification

Classification is the sole type of citizen science on Zooniverse. While there are multiple disciplines from biology to art, to history, they all require users to organize photos collected by a research team. For example, in a project about pelicans, participants identify how many pelicans are in the photo, what actions they are performing, how many eggs are in the photo, and if there are any other animals. Each project could have hundreds of thousands of photos to classify, which is why the hundreds of citizen scientists on the platform are vital (Zooniverse, n.d.).

2.1.1 Data Collection

Data collection is when citizens actively collect data for the project. The easiest example of data collection is the observations found on the iNaturalist and iSpot websites. People take photos of plants and animals and upload them to the platform along with its location. This data helps scientists observe population distribution of thousands of species across the globe (iNaturalist, n.d.; iSpot, n.d.).

One project is the Christmas Bird Count, which is the oldest citizen science project in the world, having started in 1900. Every December to January, birdwatchers count bird species and submit their data to the National Audubon Society. The data from these counts has been used vital in recognizing the impacts of climate change because scientists can track changes in population size and distribution of over 500 bird species (National Audubon Society, n.d.).

2.1.3 Instrumentation

Instrumentation is a primarily passive type of citizen science where citizens don't actively gather or analyze data but rather host an instrument, or sensor, that records data. Often, the sensors record air pollution such as Cambridge University's CamPerS (Cambridge Personal Sensors). It is a wearable lightweight sensor that measures carbon monoxide (CO), nitric oxide (NO), and nitrogen dioxide (NO₂) (Jerrett et al., 2017). They are not limited to air pollution as Pandeya et al. (2020) developed a sensor that measures water level to mitigate flood risk.

2.2 Citizen Science Benefits

Citizen science brings three general benefits: increased research quantity, increased research quality, and citizen and community advancement (Den Broeder et al., 2018). The flow from type of citizen science to benefits is captured in Figure 2.1

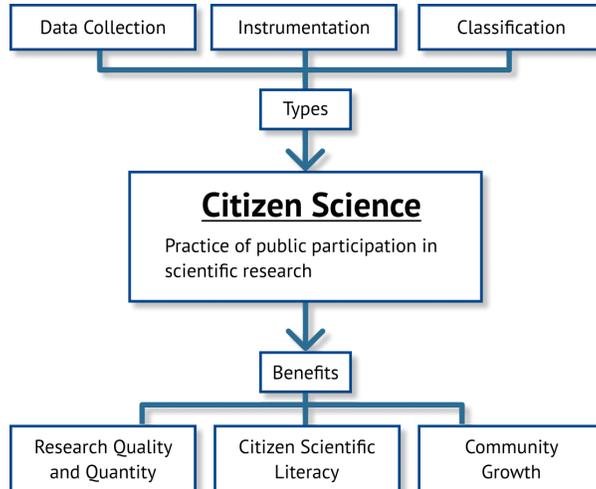


Figure 2.1 Citizen Science (infographic Flaherty, 2020).

2.2.1 Increased Quantity of Research

The participation of citizens means there are more people able to collect and analyze data and thus more research can be produced. This is especially important in research with large geographic and temporal scales (Dickinson et al., 2010). Some well-known global citizen science projects are the studies of butterfly and bird migrations. The North American Butterfly Association (NABA) has run the Butterfly Count Program in the United States, Canada, and Mexico since 1993. The data from these counts gets published into reports and informs scientists about geographic distribution and population size of butterfly species. Comparing data over data can give insight into weather and habitat change (NABA, n.d.).

2.2.2 Increased Quality of Research

Citizens increase the quality of the research by adding local knowledge that wouldn't be found in research literature, improving scientific knowledge and helping solve complex societal problems (Den Broeder, 2018). For example, local marine knowledge from regions across the world is “used to provide historical and contemporary baseline information, suggest stewardship techniques, improve conservation planning and practice, and to resolve management disputes” (Thornton and Maciejewski Scheer, 2012).

2.2.3 Citizen and Community Advancement

Finally, there are numerous benefits citizen science offers to citizens and their communities. Due to exposure of concepts such as the scientific method and rigorous collection of data, citizen science projects can increase scientific literacy in the community. Therefore, participants will be able to apply their new skills to scientific research and earn a new appreciation for science (Den Broeder, 2018). The local scientific awareness that is established

enhances social learning, social capital, and trust due to the participants' exposure to new skills and knowledge about the community (National Institute for Public Health and the Environment, n.d.). That new knowledge will inherently inform their opinions and decisions about local policy.

An example of individual and community benefits is in the Cat Tracker Project that took place in South Australia February 2015 to September 2016. The project consisted of two parts: an online survey and a period of tracking a select group of cats with a GPS. The online survey examined cat ownership, cat personality, attachment to cats, cat management, and participant demographics. The group that had their cats tracked, the citizen scientists, were the most impacted by the project and vowed to manage their cat's activity better. Additionally, survey responders that did not have their cats tracked, and people who did not participate at all, still learned better cat management practices (Roetman et al., 2018).

2.3 Citizen Science in Venice

Citizen science is rapidly growing in Venice. This section details the impact citizen science has on the community as well as the ongoing projects in Venice.

2.3.1 Research Into Citizen Science's Potential

The Venice International University (VIU), an international coalition of 20 universities, has a focus area called "Science Communication and Education" that specializes on public engagement and increasing knowledge and participation in science and research (Venice International University, n.d.). Ca' Foscari University in Venice, recently announced the Inclusive Science and European Democracies (ISEED) project. ISEED, an ambitious, multi-disciplinary project to analyze the role and value of citizen "participation in institutional decision-making that takes into account open, transparent, and shared access to deliberative process" as well as how to "improve participation and deliberation in democracy." The project will begin February 2021 (Ca' Foscari University of Venice, 2020b).

Venice also hosted the third international Citizen Observatories for Natural Hazards and Water Management (COWM) conference in September 2020, bringing representatives from research institutions, businesses, public agencies, and engineering companies together to discuss "water and soil resources management, natural risk management, and environmental protection" (COWM, n.d.). The goal of the 2020 conference was to explore citizen science's capability to increase resiliency in communities and protect cultural heritage (COWM, n.d.).

2.3.2 Citizen Science in Venice's Lagoon

Venice's culture and economy are primarily defined by its lagoon; the lifestyle and architecture has been built around the canals and countless art pieces have been inspired by its natural beauty (UNESCO, n.d.). Historically, the lagoon has played a vital role in the Venetian economy as an industrial center for shipbuilding, petrochemical processing, fertilizer and pesticide production, and non-ferrous metallurgical processing. Its location in the northern Adriatic Sea (as seen in Figure 2.2) grants it immense productivity as a port for exchanging goods even today. Over 120 fish farms fill the lagoon and over 80,000 farms for corn, cereal, and livestock occupy the drainage basin (Suman et al., 2005). The strong influence of the lagoon on Venice has caused "Venice and its lagoon" to be classified as a UNESCO World heritage site in 1987 (UNESCO, n.d.).

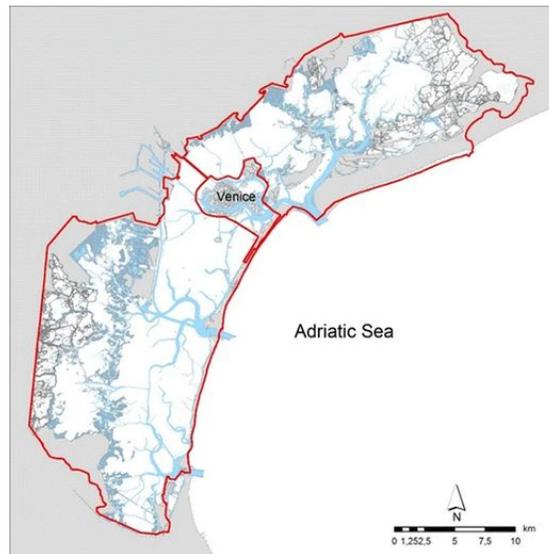


Figure 2.2. Venice and its lagoon (Scarton, 2017).

The biggest threats to the lagoon are humans, whether directly through pollution or indirectly by climate change. As such, most citizen science efforts within Venice concentrate on preservation and conservation of the lagoon and its ecosystem.

The PERSEUS Project is funded under the EU Seventh Framework Programme with the goal of protecting the seas. It hosts two citizen science projects - Jellyfish Spotting and LitterWatch, in which people submit photos and information about jellyfish or pollution observations (PERSEUS, n.d.). Stefano Piraino, a professor of zoology at the University of Salento, is among many researchers who use the PERSEUS project to enable their research. Piraino used Jellyfish Watch to detect a new species of jellyfish in the Gulf of Venice (Piraino, 2014). While such a discovery is incredibly exciting, Piraino and his team are also focused on the impact this new species will have on the native flora and fauna (Piraino, 2014). Without Jellyfish Watch, this new species would not have been located as quickly and could've caused severe damage to the lagoon ecosystem.

Our sponsor, Venice Calls, collaborates with numerous other Venetian local businesses and organizations to perform citizen science projects. One of the biggest projects they do is based around pollution in Venice. They bring the Venetian community together to host events like Blue Horizon Project, to spread awareness about plastic pollution in the lagoon. They also work with Plastic Free Venice Lagoon to organize large-scale clean ups and environmental monitoring initiatives in collaboration with research institutions (Plastic Free Venice Lagoon, n.d.; Venice Calls, n.d.).

Citizen science has even prevailed and provided new insights while affected by COVID-19. Venice's economy is heavily reliant on tourism, bringing around 3 billion Euros a year (Momogliano, 2020). To reduce the impact of COVID-19, the Italian government limited all non-essential travel on March 9, 2020 (France-Presse, 2020). This drastically reduced the traffic in the streets, as there were an estimated 87,300 tourists crowding Venice daily (Bertocchi and Visentin, 2019). Soon after, Venetians marveled as the canal waters were clearer than they have ever seen, and fish and birds flocked the lagoon (Moraca, 2020). Fabio Pranovi and his ecology

research team at the Ca' Foscari University called upon Venetians to send them any photos of the lagoon, animals, or state of the canals. Any submissions sent will guide the team on analyzing anthropogenic influence on the lagoon and ways to improve environment conditions in Venice (Ca' Foscari University of Venice, 2020a).

2.3.3 Efforts by Venice Calls

Our primary stakeholder is our sponsoring agency, Venice Calls. Venice Calls is a non-profit organization that has been working to solve environmental, social, and economic problems in Venice. The organization was founded in 2018 by a group of friends who all had the same intention in mind: to protect Venice and the Lagoon. The organization strives to act on their mission by organizing projects, conferences, and events. Some projects include clean-ups, where the organization and those who choose to participate, clean beaches and the Lagoon area to reduce the amount of plastic found in the sea and raise awareness of the issue, as shown in Figure 2.3 (Venice Calls, n.d.).



Figure 2.3 Venice Calls clean up project (Venice Calls, n.d.)

Venice Calls also runs projects known as “retakes” where they clean and remove graffiti from city building walls. The organization has worked with Masegni & Nizioletti, a Venetian association whose goal is to organize cleaning events and organize activities against the vandalism of buildings (Venice Calls, n.d.). Venice Calls’ newest initiative is the Public Green Program, which focuses on planting trees and plants in order to raise awareness of the lack of greenery within the city. However, due to the COVID-19 pandemic, it has been postponed indefinitely.

2.3.4 Efforts by WPI, the Venice Project Center

The Venice Project Center is a part of Worcester Polytechnic Institute’s (WPI) Interactive Qualifying Project (IQP) program. During it, students travel to communities across the globe and work with those communities on a local problem. The Venice Project Center has been hosting projects since 1988 across a variety of subjects. Past projects include:

- “Created a digital model of Venice streets, conducting pedestrian counts to identify congestion points
- Designed a smartphone game exploring displaced artwork, demolished churches, and filled-in canals of Venice
- Built a proposal for tourism management based on safety and occupancy standards” (Worcester Polytechnic Institute, n.d.)

In 2019, in collaboration with Venice Calls, WPI students completed the “Plastic-Free Venice: Quantifying and Mapping Plastic Pollution” project in which they collected, categorized, and weighed pollution in the Venice Lagoon. They also assessed the effectiveness of public trash receptacles and waste pick-up locations so they could finally “develop recommendations for the overall plan to reduce plastic pollution” (Bonnano et al., 2019).

2.4 Enhancing Communication Between Science and the Community

Citizen science enhances social learning, social capital, and trust due to the participants’ exposure to new skills and knowledge about the community (National Institute for Public Health and the Environment, n.d.). That new knowledge will inherently inform their opinions and decisions about local policy which pervade throughout the community (Roetman et al., 2018). Thus, it is essential that citizen science data is clearly communicated to the community. Data visualizations can be used to enhance data comprehension (Taylor, 2016).

2.4.1 Emergence of Citizen Science Platforms

Advancements in technology have encouraged organizations to develop citizen science web platforms. These platforms have the potential to be immensely powerful resources to many different stakeholders: the public, journalists, other researchers, government officials, and more. Four ways citizen science web platforms are advantageous are:

1. Increase ease of communication within communities, and possibly change the boundaries of effective community formation (Leeuwis et al., 2018)
2. Act as a resource for citizens to learn about a topic and participate in researching it (Leeuwis et al., 2018)
3. Support the co-creation of relevant knowledge by making community-based monitoring part of citizen science activities that add value to available information (Leeuwis et al., 2018)
4. Strengthen the ability of local communities to organize via connective action, which constitutes a new form of collective mobilization that is less reliant on formal organizational coordination (Leeuwis et al., 2018)

An example of a citizen science platform is SciStarter, which offers more than 3,000 projects to join where participants can collect or analyze data (Scistarter.org, n.d.). There are also free mobile apps available, such as iNaturalist, in which participants can share pictures of wildlife and nature of their region (iNaturalist, n.d.). This increase in citizen science applications being hosted on online platforms is the result of enabling projects to have many participants interact simultaneously. Not only does it allow for a larger amount of contribution, but it also provides an inherent way of advertising the project to prospective participants.

2.4.2 The Importance of Data Visualizations in Science Communication

Data visualizations enable quick comprehension of aggregate data. Without accurately and responsibly visualizing the data, stakeholders could misinterpret the data and make misinformed decisions. Therefore, it’s important our design provides clear communication about ongoing efforts in Venice backed up by straightforward and reliable graphs and charts. Data visualizations expedite information processing by displaying information in a format the human brain can process quickly.

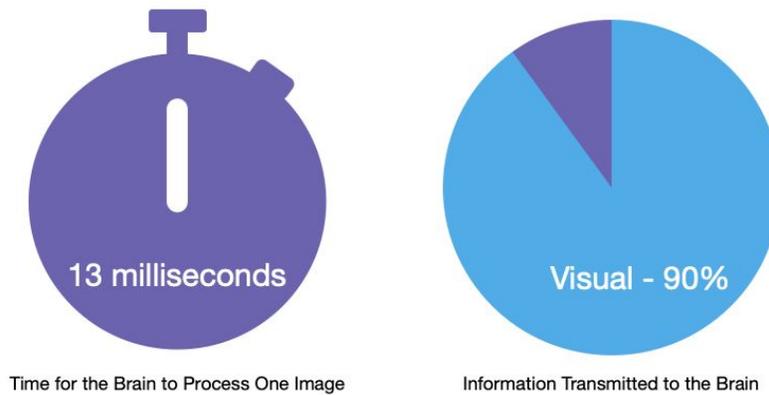


Figure 2.4 Graphical representations of the information in 2.4.2 (data from Trafton, 2014; visuals by Davis, 2020).

The human brain can process an image in as little as 13 milliseconds (Trafton, 2014). For context, a blink of the human eye takes approximately $\frac{1}{3}$ of a second, or 333 milliseconds (Kwon et al., 2013). That makes visual information the fastest type of information a human can understand and hence why most information is presented visually. An example of visualizations aiding the speed of comprehension can be found in Figure 2.4

3. The Process To Produce The Design

The goal of this project was to develop a design of a digital platform for citizen science projects in order to address environmental, social, and economic problems in Venice. To design the platform, we followed the following design process:

1. Identify potential user identities and preferences
2. Adopt and adapt features from existing platforms
3. Iteratively design the citizen science platform

The subsequent sections describe the strategies we used to achieve each of the deliverables. These deliverables were followed through an iterative process, constantly being revisited throughout the duration of the project.

3.1 User Identities and Features of the Citizen Science Platform

To understand the goal and features of the platform, we first identified the types of users that could be using it through discussions with Venice Calls and our advisors. For the list of questions we asked to each entity please refer to Appendix C, D, and E. Then, for each user, we created detailed user profiles that described their occupation, purpose of using the platform, and preferences (Farino, 2013). The types of users we identified the following (Figure 3.1.1):

1. Organizers
2. Volunteers
3. Scientists
4. Journalists
5. Non-Volunteers/Citizens

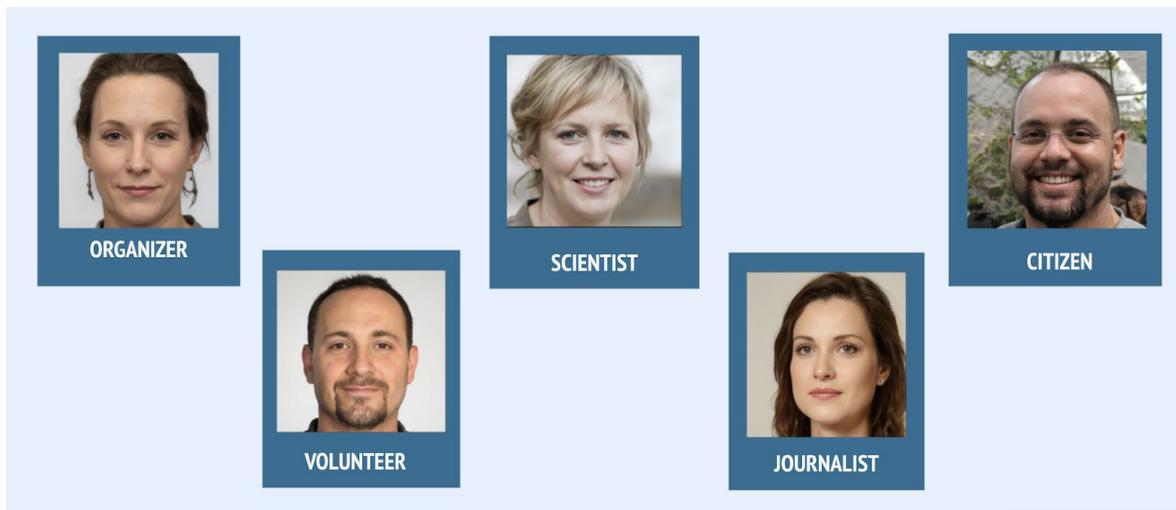


Figure 3.1.1. Headshots for User Profiles

The next step was to identify what each of these identities' motivation for using the platform could be. We identified the features they wished were in existing platforms and how they would use them. From the features that the potential users would want, we developed a list of features the design of the platform should have. Throughout the duration of the project, we revisited this deliverable to make sure our design addressed the wants and needs of our potential

users. Our main features, as seen in Figure 3.1.2, revolve around the citizen science projects that would be hosted on our platform. From these core four features, we designed elements of the website that would aid users in locating and using these features.

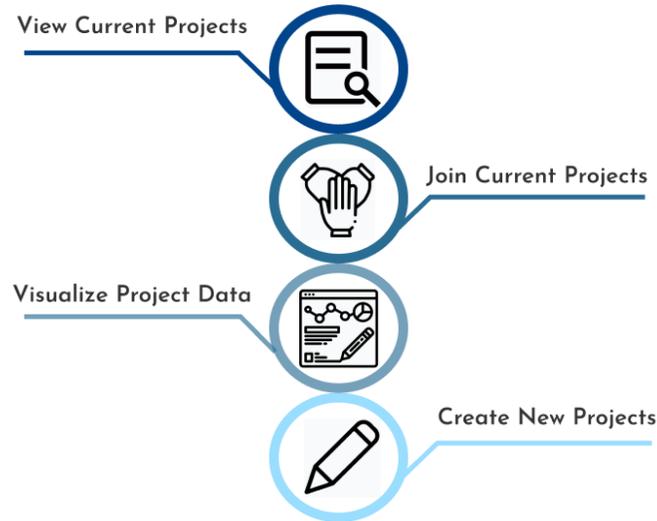


Figure 3.1.2 Main Features of the Platform

3.2 Adapt and Adopt Features from Existing Platforms

The second step in our iterative design process was to analyze existing citizen science platforms to adapt and adopt the user interface (UI) and user experience (UX) elements of their platforms.

User interface is associated with visual elements, such as buttons and icons, that allow a user to interact with a product or service, or in our case, an online application (Digital.gov, n.d.). A seamless UI is essential for citizen science platforms to maximize user engagement and increase their likelihood of returning to the platform. Therefore, we conducted participant observations by analyzing twelve web platforms and ranking their features in a matrix as seen in Appendix A. After analyzing these platforms, we combined our rankings to focus on the most important features. The platforms with the top three scores, as seen in Appendix B, are listed below:

1. Zooniverse
2. EU-Citizen Data (tie)
2. iNaturalist (tie)
3. ALA Project Finder (tie)
3. Anecdata (tie)
3. CitSci (tie)

The best user interface elements were screenshotted and annotated with detailed labels to identify how and why we should implement them into our application. This can be seen in Figure 3.2.1.



This short sentence in the banner does a very good job at describing what the application does - it draws the users in



Featured projects are one of the first things that you see - lead by example

Figure 3.2.1 Annotation of Zooniverse

3.3 Iteratively design the citizen science platform

To design our online platform, we used Figma, an online collaborative application to design various user interfaces. Its easy-to-use interface and ability to create prototypes helped us share our designs with the stakeholders to solicit feedback and to evaluate the effectiveness of our designs. We also used Figma to gather features and user interface elements from various other websites and organize what aspects we like and want to incorporate into our design. By using Figma, the resulting product is a comprehensive and interactive design that clearly lays out how the website should function and look.

Once the design had been completed, we moved on to the next step of the Iterative Design Process, which involves designing layouts, connecting them together into a prototype, and then evaluating the prototype with the goal of improving the design. For the evaluation, we consulted our advisors, sponsor, and peers and they tested the design prototype. Their feedback informed us on aspects of the design that were missed or needed improvement.

4. The Venice Citizen Science Website

Using Figma we were able to design a website that met the needs of the users we identified. In order to efficiently describe the important features of our design, we will walk through each user profile to discuss how each type of user would use the platform. To view all prepared views of the website please reference Appendix F, G, and H or our website; sites.google.com/view/ve20-vcsp

The overall organization of the platform, as seen in Figure 4.0.1, consists of multiple organizations that host citizen science projects. For each project, there can be multiple events. Each event has information on where and how to participate, and the data that was collected during that event. The events, project descriptions, images, data sets, and data visualizations for each organization can be changed at any time by an organizer.



Figure 4.0.1 The Conceptual Organization of the Platform

4.1 Organizer

The primary users of our platform will be the organizers of the citizen science projects. These users represent local organizations who sponsor citizen science projects. We created a user profile for organizers, as it can be seen in Figure 4.1.1.

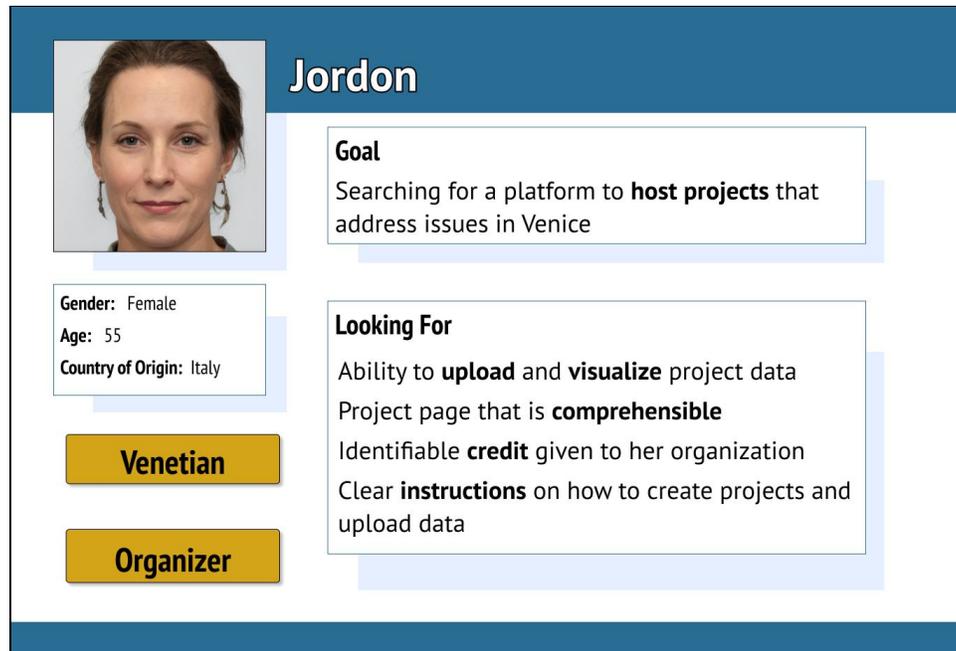


Figure 4.1.1 Organizer User Profile

An organizer would use the platform to publish their projects in order to attract volunteers. They would also want to visualize data obtained from the projects. Accomplishing these tasks require complex tools, thus the organizer needs the platform to have clear instructions and an intuitive design. Finally, an organizer would want all platform users to be able to view and contact their organization.

In our platform we include an organization page, as seen in Figure 4.1.2, where organizers like Jordan can publicize their organization's mission, contact information, and citizen science projects that they are hosting. When an organizer is logged in, they can change the content of the page and add new citizen science projects whenever they want. The process to add a project is made easier by outlining steps that provide assistance with what each section should contain.



Figure 4.1.2 Organization Page

Once the organizer has created a new project, they can edit the project to provide graphics, descriptions of the project, contact information, as well as information on how to take part in a project and its events. This editing view of projects and events can be seen in Figure 4.1.3.

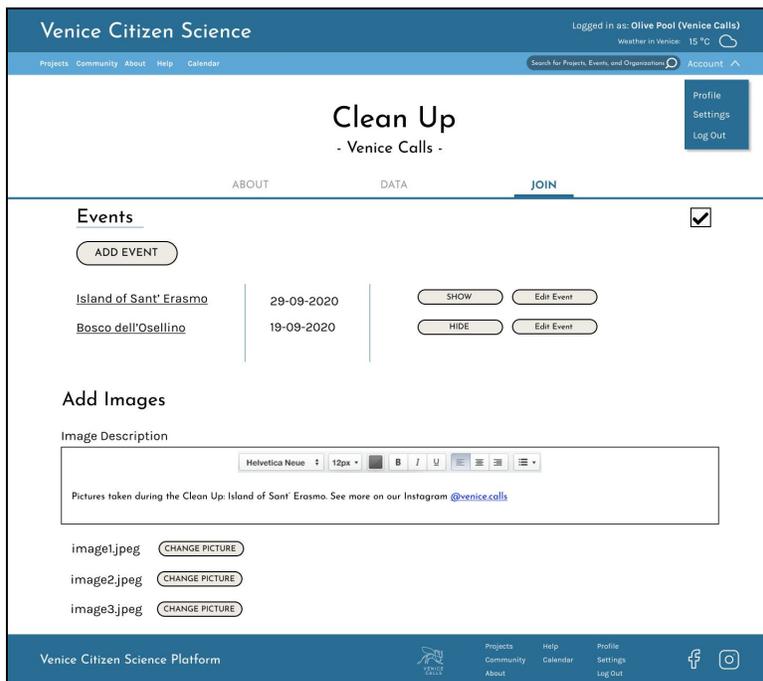


Figure 4.1.3 Editing Project Page

An organizer can also upload data for a project or a project's event. From their point of view, the data section of a project or event page allows them to filter through already existing data sets and data visualizations, but also upload their own data to the platform. This interface can be seen in Figure 4.1.4.



Figure 4.1.4 Data Tab from Organizer's Perspective

4.2 Volunteer

Our second type of user is the volunteer. Without them, we wouldn't have abundant amounts of data to collect and share. We created a user profile to provide an example of who a volunteer who uses our platform could be like. The information regarding our volunteer, Phil, is displayed in Figure 4.2.1.

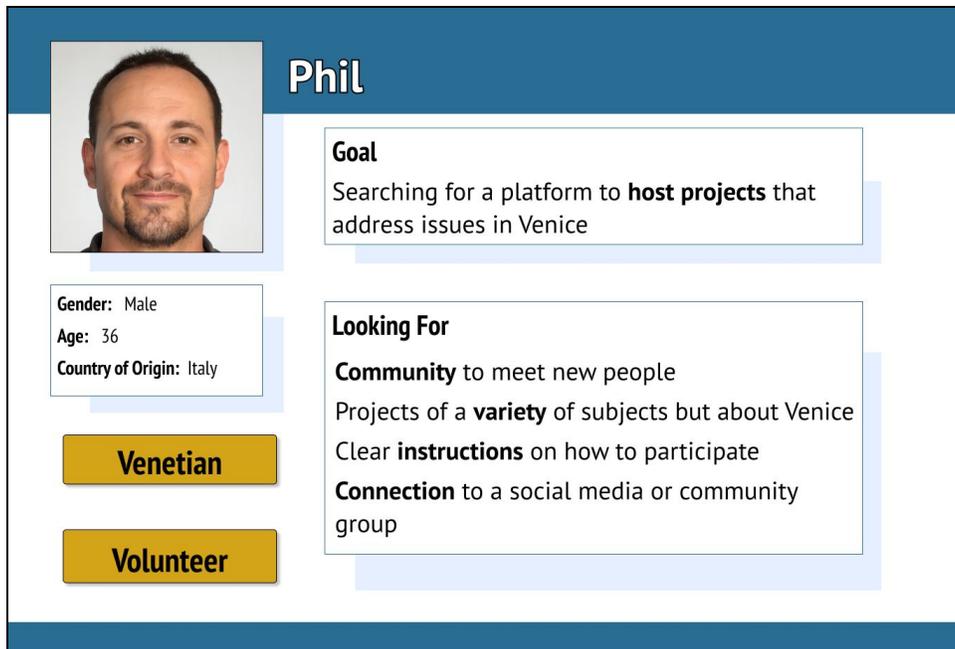


Figure 4.2.1 The Volunteer User Profile

Volunteers want to learn more about the organizations that host citizen science projects and how to get involved in their projects. In addition, volunteers may be looking for a community to meet new people.

Volunteers can click on the Projects tab to find citizen science projects that they may be interested in participating in. They will then arrive at the projects page, as seen in Figure 4.2.2.

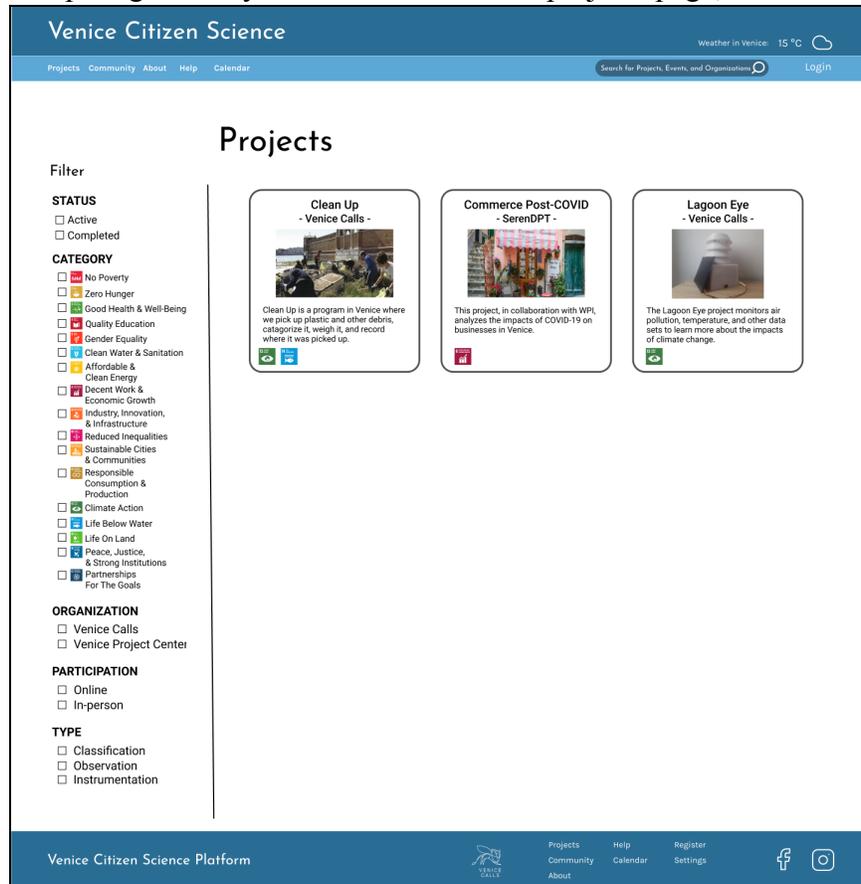


Figure 4.2.2 Projects Page

On the projects page, volunteers have many options to find a project that they deem interesting. One of the tools they could use is the filter section on the left hand side of the screen. The filter allows for users to view projects by: status of the project, United Nations Sustainability goal, sponsoring organization, type of participation, and type of citizen science project. By using the filter, volunteers can find specific projects that align with their interests. Each project has a brief description. Users can also get a glimpse of what the project is about by looking at the thumbnail picture and the associated United Nations Sustainability Goal.

Once the volunteer has found a project that they are interested in, they can click on it to arrive at the project's About page. We'll discuss the about page more in the section 4.4 Journalists and Citizens. To learn more about the organization hosting the project, users can click on the organization name. To learn how to participate in this project, volunteers can click on the Join button, as seen in Figure 4.2.3.

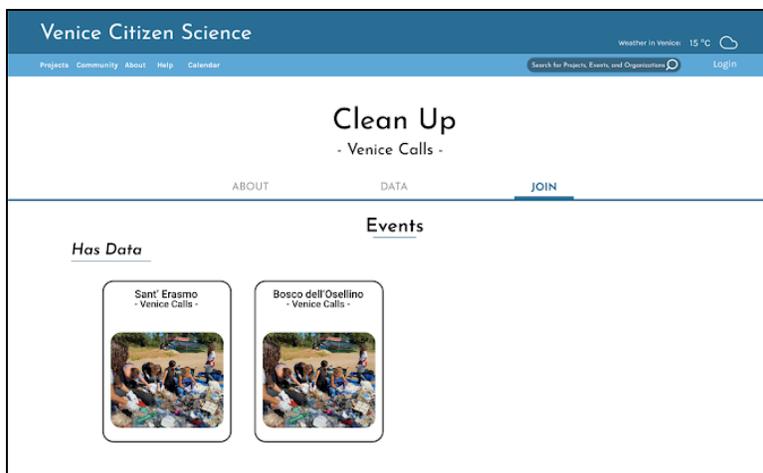


Figure 4.2.3 Join section of the Project Page

Volunteers can participate in events the project is hosting. The events are displayed in a grid-like format with a title and picture of the event. For example, the Clean Up project has an event called “Island of Sant’ Erasmo”, where participants will be picking up plastic and sorting it based on its type and weight.

If a volunteer sees an event that they are interested in joining, they can click on the event and be led to the event’s Join page, as seen in Figure 4.2.4. There, users can see when and where the event will take place, what kind of gear is required, how to sign up, and who to contact with questions. To get directions to the meeting location, clicking on the map will direct users to a Google Maps page where they can get personalized directions to the event.



Figure 4.2.4 Join section for an Event

If the organization is not hosting events, users can scroll down on the project’s join page to learn more about other ways to participate in the project, as seen in Figure 4.2.5. Users can also join the project’s newsletter to be kept up to date about the progress of the project and to learn new ways that they can get involved.

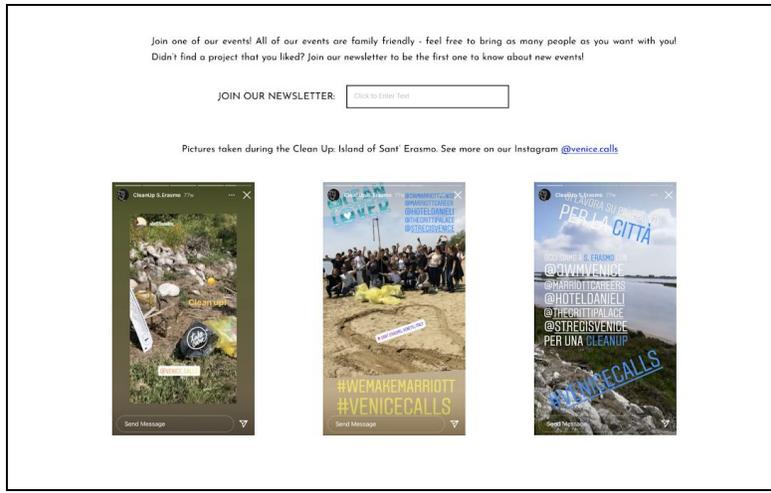


Figure 4.2.5 Join Section with Newsletter option

4.3 Scientists and Government Officials

The next types of users are scientists and government officials. We grouped them together because they have similar motives when navigating our platform. Both of these types of users want access to raw data and view the methods of data collection used by specific projects. Scientists want to look at the raw data on our platform in order to help them with their own projects or research. Government officials want to look at data and view projects in order to share accurate information with the public. We created a user profile for a scientist, as seen in Figure 4.3.1.

Sophia

Gender: Female

Age: 46

Country of Origin: England

Goal

Studying marine **biodiversity** within the Venetian lagoon

British

Marine Biologist

Looking For

Raw data on Venetian ocean plants and animals

Methodology of projects

Clear buttons for **navigation**

Ability to **download** datasets

Multiple language options

Figure 4.3.1. Scientist User Profile

When using the application, scientists will look at projects related to their field and spend most of their time in the “Data” tab of the events page as seen in Figure 4.3.2.



Figure 4.3.2. Data View and Download Page

At the top of the left section of the page, users can toggle through each data set and get a description, accompanying visual, and options to download the data. After selecting a data set, users can filter the data they want to see in the visual or download the raw data to create their own data visualizations.

4.4 Journalists and Citizens

Our final two types of users are journalists and citizens. Because they share similar user journeys and preferences, they will be discussed in the same section. Their user profiles can be seen in Figure 4.4.1 and Figure 4.4.2 respectively.

The image shows a user profile for Lisa. At the top left is a portrait of a woman with brown hair. To the right of the portrait is the name "Lisa" in white text on a blue background. Below the portrait is a box containing demographic information: "Gender: Female", "Age: 30", and "Country of Origin: United States". Below this box are two yellow buttons with black text: "American" and "Journalist". To the right of the portrait is a box titled "Goal" with the text "Writing a story about **Venice's society**". Below the goal box is another box titled "Looking For" with the following text: "Project **impact**", "Project **background**", "Information on **how to cite**", "Organizer **contact** information", and "Explanation of how **data relates to project** mission".

Figure 4.4.1 Journalist User Profile

A journalist would be interested in learning about the citizen science projects and the impact they have on the Venetian community. If they wanted to cite the information they obtained from the platform, they would like to know how to cite the information. In addition, if they want to interview the organizers of the projects, they would like to have access to their contact information.

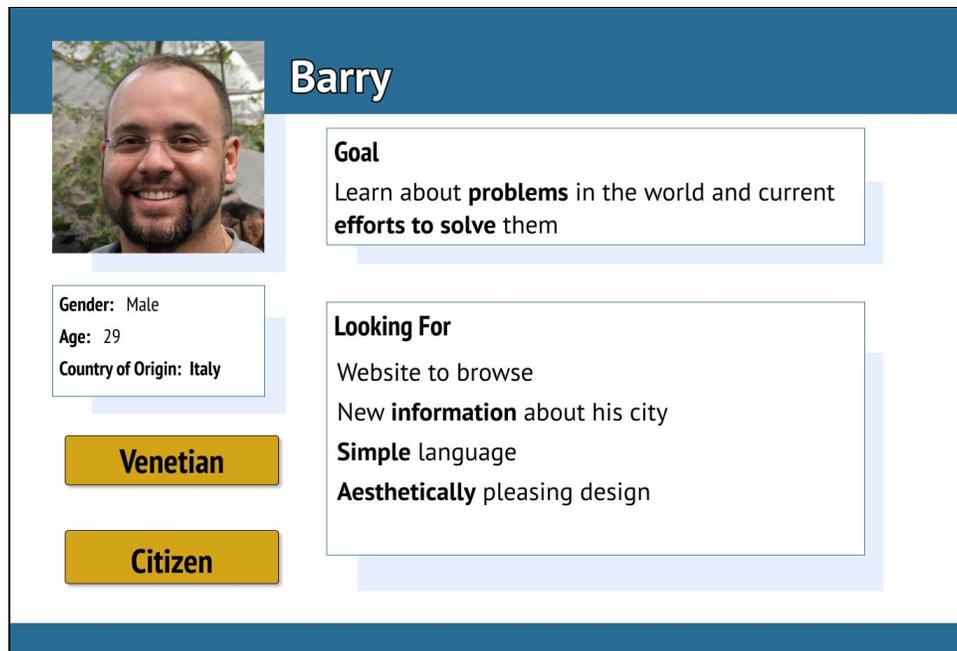


Figure 4.4.2 Citizen User Profile

A Venetian citizen would be looking to learn more about how issues in their city and the world are being addressed. They would mainly be browsing through the platform and the current projects for their pleasure and would want to learn more about the platform's goal, how the platform is accomplishing that goal, and the history of the site.

When general visitors first reach the platform they will be greeted by the home page (Figure 4.4.3). At the top of the home page is a banner image, which shows Venetians participating in citizen science projects, and is accompanied by a short description of the platform. The description welcomes the visitors and has a call to action to interact and participate. Below the banner image are a few featured projects, these highlight the wide array of opportunities available on the platform. Further below is the platform's mission and a visual of the main features the platform offers.

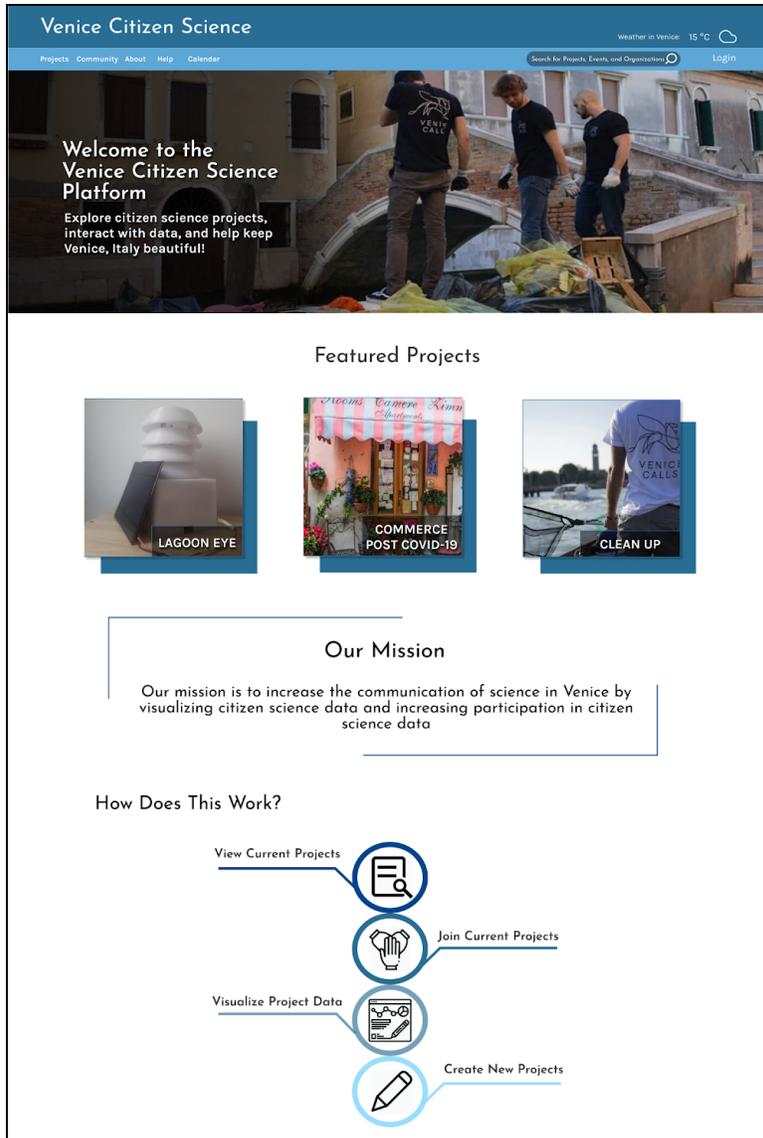


Figure 4.4.3. The homepage of the platform

In addition to the homepage, there is more information on the About page describing how the platform works and how projects relate to the UN Sustainability Goals.



Figure 4.4.4. About page of platform

Once users are familiar with the platform, they can begin exploring projects. After selecting one, they are able to view the goal of the project, its impact thus far (seen in Figure 4.4.5), and contact information for the project’s organizer(s). For more information about the sponsoring organization, users can click on the name of the organization, which is located under the project’s title, and be taken to the organizer page (Figure 4.4.6).



Figure 4.4.5. About and apparent location of project organizer on project page.

Users can read the organization’s mission and see what other projects they are sponsoring. Contact information for the organization is also easily accessible on the left side under the organization’s cover image.



Figure 4.4.6. Mission and contact information on the organizer page.

Once the journalist has collected all needed information from the platform, they may want to know how to cite it. Selecting the “Help” button on the menu bar displays the platform’s help page and located near the top are citation instructions (Figure 4.4.7).

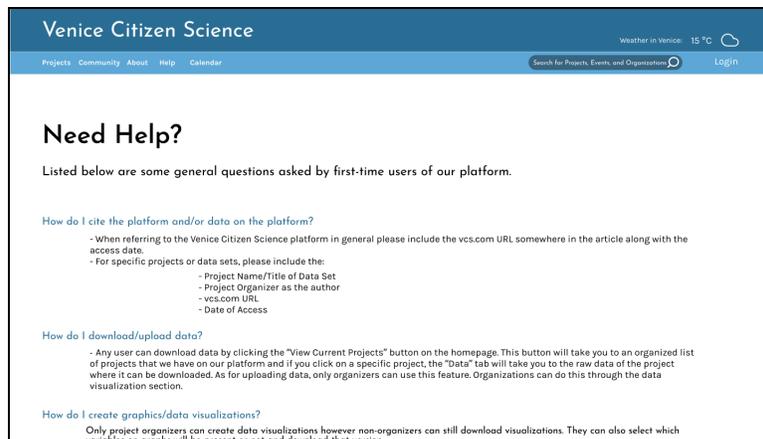


Figure 4.4.7. Information on how to cite the platform.

5. Concluding Thoughts On The Design

The one feature every user will use is the **homepage**. Because it will be seen by everyone, it is important to ensure the homepage is **straightforward, easy to navigate**, and aesthetically pleasing. Our design has a banner image at the top of the page welcoming users to the platform and giving them a preview of what the platform is about. Right underneath, a select few projects are featured so users are quickly introduced to the amazing projects this platform has to offer. Next, the mission of the platform is stated, to help anyone who is still unsure what the platform is for. Finally, the homepage has an interactive graphic with four buttons; View Current Projects, Join Current Projects, Visualize Project Data, and Create New Projects.

Second to the homepage, the **Help and Get Involved Pages** answer questions and offer guidance for all types of users. These pages help users learn more about how the platform works and how to get involved. The “Help” page answers some common questions asked by first-time users. Some of these questions are “How do I cite the website as a source?” and “How do I download/upload data?” The “Get Involved” page further explains how each type of user can get involved using our site. It explains what organizations, journalists, volunteers, scientists, government officials, and even what normal citizens can do to further make use of the site. We feel that these pages are important for **ensuring users clearly understand how to use the platform**.

The **project discovery page** is integral to the success of the platform. It provides easy access to all projects happening in Venice. Users can easily find the project they want with sort and filter options to best suit their preferences.

The motivation for this project was to **provide better access to citizen science data** and the data visualization pages provide that access. Users can easily visualize data and can download their visualizations for future use. Additionally, users can **get access to raw data** for any project.

To summarize, there are plenty of features that make this platform great. These are just several of the many features that we included in the platform design. We hope these features inspire users to return to the platform. Next, we are giving our design to our sponsor, Venice Calls, to **develop into a fully functional website**.

6. Recommendations for Future Development

The design laid out in this report sets the course for developing a robust platform to support the various citizen science efforts occurring in Venice, Italy. Throughout this project we have gathered ideas, suggestions, and research on how to successfully implement this platform. In this section we will detail what we've learned and what decisions still need to be made.

6.1 Data Visualizations

Data visualizations were the central idea that spurred this project into existence. Our sponsor has a deep desire to share the data they are collecting in a way that can further scientific research and establish credibility of their collection methods. In order to implement data visualizations in this platform, three processes need to be considered:

1. The process by which data is stored
2. The process by which graphs and figures are created
3. The process by which data is downloaded (in bulk) and cited

Data is uploaded in three primary ways; in bulk by organizers, individually by volunteers, or semi-continuously by automatic sensors. The organizers will want to be able to upload their data as a document, primarily Excel Workbook, CSV, or as JSON. For them, the platform needs to be able to **receive uploaded files** and securely parse them in order to **save the data in a database**. The volunteers will want to upload data through the website directly, most likely on their phone. It will be important for the mobile version to contain a page making it easy to submit data to a project. The sensors will need to talk to the platform directly, with little to no human interaction. This is most securely accomplished by implementing an Application Programming Interface (API). The API handles the communication between the website/sensors and the database, ensuring the connections are secure (authenticated) and safe (non-malicious). Further research is needed to successfully implement a secure and safe API.

Graphs can be created using a multitude of software and services. The trouble comes when looking for the best software or service for the situation. During the course of designing the platform, we identified two solutions for creating visuals and embedding them in the platform. The first, and easier, method is to have users make an account on datawrapper.de and get embed codes after using Datawrapper's visuals utility. The second, and more seamless, method is to develop a visuals creation utility using **D3.js**, a popular JavaScript library for manipulating data and creating graphics. More research is warranted as well as consideration of the time and other constraints put on the development team.

Sharing data is the next step after storing and visualizing it. Various entities will want to be able to download graphs as well as the raw data for independent analysis. While only one option for downloading the raw data is necessary, supporting several file types to download makes it easier for users. We recommend supporting **excel workbook files** at a minimum. Additional file types may include CSV and JSON. In addition to downloading the data, users and organizers will want an easy way to cite the data they are using. Having a citation generator as

part of the download screen would make the process easier. More research is needed to discover if such generators exist already.

6.2 User Engagement

Visitor/user engagement is highly important for the success of this platform. Without users there is no point to creating a platform in the first place. It's important to continually grow the platform's audience of users as well as maintain engagement with those users who are already established.

- SEO
- Newsletters
- Accessibility

In order to **bring new users to the platform**, optimizing it for **search engines** is critical. Ensuring the search engine can retrieve useful information from the platform will help raise the ranking of the platform in users' search results.

In order to **maintain current users**, we will email a periodic **newsletter** with updates to the platform and its projects. The newsletter can contain information on how to get involved, and the benefits of being involved. This is also an opportunity to prey on the 'fear of missing out' complex, to entice users into participating.

Another key aspect of user engagement is **accessibility**. When developing web applications, the end goal is to have the application used by as many people as possible. With that goal in mind, it is crucial to accommodate as many users as possible. Users with impairments may have a harder time interacting with a website if their situation is not considered during the design of the application. Therefore, we recommend referring to the **W3C Web Content Accessibility Guidelines** to understand accessibility, usability, and inclusion principles and how people with disabilities use the web. Following those guidelines will help to ensure the platform is accessible to as many users as possible.

References

- Bertocchi, D. & Visentin, F. (2019). “The Overwhelmed City”: Physical and Social Over-Capacities of Global Tourism in Venice. *Sustainability*, 11(24), 6937 <https://doi.org/10.3390/su11246937>
- Bonanno, S., Hagedorn, A., Howlett, T., & Nguyen, V. (2019). *Plastic-Free Venice: Quantifying and Mapping Plastic Pollution*. <https://digitalcommons.wpi.edu/cgi/viewcontent.cgi?article=6657&context=iqp-all>
- Ca' Foscari University of Venice. (2020a, April 6). *Coronavirus: Citizen science helps report ecosystem changes during the lockdown*. Phys.org. Retrieved October 13, 2020 from <https://phys.org/news/2020-04-coronavirus-citizen-science-ecosystem-lockdown.html>
- Ca' Foscari University of Venice. (2020b, Sept 29). *Models of participation in science and democracy*. Ca' Foscari University of Venice. https://www.unive.it/pag/16584/?tx_news_pi1%5Bnews%5D=9412&cHash=1db798a975Ea219e9fdeaffd3b896319
- Citizen Observatories for Natural Hazards and Water Management. (n.d.) *Introduction to COWM*. COWM. <https://cowm.eu/en/introduction-to-cowm>
- Den Broeder, L., Devilee, J., Van Oers, H., Jantine Schuit, A., & Wagemakers, A. (2018, June). Citizen Science for Public Health. *Health Promotion International*, 33(3), 505–14, <https://doi.org/10.1093/heapro/daw086>
- Dickinson, J.L., Zuckerberg, B., & Bonter, D.N. (2010). *Annual Review of Ecology, Evolution, and Systematics*, 41, 149-72. <https://www.jstor.org/stable/27896218>
- Digital.gov. (n.d.) *User Interface Design Basics*. Usability.gov. <https://www.usability.gov/what-and-why/user-interface-design.html>
- Farino, P. (2013, July 30). *Developing archetypes*. Medium. Retrieved November 24, 2020 from <https://medium.com/@paulfarino/developing-archetypes-2db5a b34043c>
- France-Presse, A. (2020, Mar 10). *Don't travel, don't socialize, stay inside: Italy's coronavirus lockdown rules*. The Guardian. Retrieved October 13, 2020 from <https://www.theguardian.com/world/2020/mar/10/stay-inside-dont-travel-dont-socialise-it-aly-s-coronavirus-lockdown-rules>
- iNaturalist. (n.d.). <https://www.inaturalist.org/>
- iSpot. (n.d.). <https://www.ispotnature.org/>

- Jerrett, M., Donaire-Gonzalez, D., Olalekan, P., Jones, R., Cohen, R.C., Almanza, E., de Nazelle, A., Mead, I., Carrasco-Turigas, G., Cole-Hunter, T., Triguero-Mas, M., Seto, E., & Nieuwenhuijsen, M. (2017). Validating novel air pollution sensors to improve exposure estimates for epidemiological analyses and citizen science. *Environmental Research*, 158, 286-294. <https://doi.org/10.1016/j.envres.2017.04.023>
- Kwon, K.A., Shipley, R.J., Edirisinghe, M., Ezra, D.G., Rose, G., Best, S.M., & Cameron, R.E. (2013). High-speed camera characterization of voluntary eye blinking kinematics. *Journal of the Royal Society Interface*, 10(85), 20130227. <https://doi.org/10.1098/rsif.2013.0227>
- Leeuwis, C., Cieslik, K.J., Aarts, M.N.C., Dewulf, A.R.P.J., Ludwig, F., Werners, S.E., & Struik, P.C. (2018). Reflections on the potential of virtual citizen science platforms to address collective action challenges: Lessons and implications for future research. *NJAS - Wageningen Journal of Life Sciences*, 86-87, 146-157. <https://doi.org/10.1016/j.njas.2018.07.008>
- Moraca, S. (2020, May 25). *The canals are clear thanks to the coronavirus, but Venice's existential threat Is climate change*. The World. <https://www.pri.org/stories/2020-05-25/canals-are-clear-thanks-coronavirus-venice-s-existential-threat-climate-change>
- National Audubon Society. (n.d.). *History of the Christmas Bird Count*. Audubon. <https://www.audubon.org/conservation/history-christmas-bird-count>
- National Institute for Public Health and the Environment (n.d.) *10 Benefits of Citizen Science*. <https://magazines.rivm.nl/en/2018/10/citizen-science/10-benefits-citizen-science>
- North American Butterfly Association. (n.d.). https://www.naba.org/butter_counts.html
- Pandeya, B., Uprety, M., Paul, J.D., Ram Sharma, R., Dugar, S., & Buytaert, W. (2020). Mitigating flood risk using low-cost sensors and citizen science: A proof-of-concept study from western Nepal. *Journal of Flood Risk Management, Early View* <https://doi.org/10.1111/jfr3.12675>
- PERSEUS. (n.d.) *About PERSEUS*. PERSEUS. http://www.perseus-net.eu/site/content.php?locale=1&locale_j=en&sel=485
- Piraino, S. (2014, May 13). *The beautiful new jellyfish identified in the Gulf of Venice*. The Conversation. Retrieved October 13, 2020 from <https://theconversation.com/the-beautiful-new-jellyfish-identified-in-the-gulf-of-venice-26616>
- Plastic Free Venice Lagoon. (n.d.) <https://www.plasticfreevenice.org/>
- Roetman, P., Tindle, H., & Litchfield, C. (2018). Management of Pet Cats: The Impact of the Cat

- Tracker Citizen Science Project in South Australia. *Animals*, 8(11), 190.
<https://doi.org/10.3390/ani8110190>
- Scarton, F. (2017). Fig. 1 From: Long-term trend of the waterbird community breeding in a heavily man-modified coastal lagoon: the case of the important bird area “Lagoon of Venice.” <https://doi-org.ezpxy-web-p-u01.wpi.edu/10.1007/s11852-016-0470-8>
- Scistarter. (n.d.) <https://scistarter.org/>
- Suman, D., Guerzoni, S., and Molinaroli, E. (2005, Nov). Integrated coastal management in the Venice lagoon and its watershed. *Hydrobiologia*, 550, 251-269.
<https://doi.org/10.1007/s10750-005-4393-x>
- Taylor, A. (2016, Oct 3). *Improving science communication in 3 easy steps*. Novartis.
<https://www.novartis.com/stories/from-our-labs/improving-science-communication-3-easy-steps>
- Thornton, T.F. & Maciejewski Scheer, A. (2012). Collaborate Engagement of Local Traditional Knowledge and Science in Marine Environments: A Review. *Ecology and Society*, 17(3), 8 <https://www.jstor.org/stable/26269064>
- Trafton, A. (2014, Jan 16). *In the blink of an eye*. MIT News.
<https://news.mit.edu/2014/in-the-blink-of-an-eye-0116>
- UNESCO (n.d.) *Venice and its Lagoon*. <https://whc.unesco.org/en/list/394/>
- Venice Calls. (n.d.). <https://www.venicecalls.com/>
- Venice International University. (n.d.) *Science Communication and Education*. Venice International University.
<https://www.univiu.org/focus-areas/science-communication-and-education>
- Worcester Polytechnic Institute. (n.d.) *Venice, Italy Project Center - IQP*.
<https://www.wpi.edu/project-based-learning/project-based-education/global-project-program/project-centers/venice-italy-project-center-iqp>
- Zooniverse (n.d.) <https://www.zooniverse.org/>

Appendices

Appendix A - Platform Comparison Rubric

Platform Name	Targeted Purpose	Helpful Features (List most helpful (top) to least helpful (bottom))	Explain why you found the features helpful	UnHelpful Features (List least helpful (top) to more helpful (bottom))	Explain why you found the features unhelpful	Ease of use (1-10, 1: not easy, confusing, got lost. 10: Super easy, clear instructions, never lost)	Explain how the platform was or was not easy to use	General Comments
<i>EU-Citizen Science</i>								
<i>CitSci</i>								
<i>Anecdata</i>								
<i>iNaturalist</i>								
<i>iSpot</i>								
<i>Zooniverse</i>								
<i>ALA Project Finder</i>								
<i>Venice Project Center</i>								
<i>Minna-no Data</i>								
<i>Österreich forscht - Citizen Science Network Austria (CSNA).</i>								
<i>Cape Citizen Science</i>								

Appendix B - Scores of Citizen Science Projects -

Platform Name	Ease of use (1-10, 1: not easy, confusing, got lost. 10: Super easy, clear instructions, never lost)	Ease of use (1-10, 1: not easy, confusing, got lost. 10: Super easy, clear instructions, never lost)	Ease of use (1-10, 1: not easy, confusing, got lost. 10: Super easy, clear instructions, never lost)	Ease of use (1-10, 1: not easy, confusing, got lost. 10: Super easy, clear instructions, never lost)	Sum Of Scores
EU-Citizen Science	8	9	9	6	32
CitSci	6	10	7	8	31
Aneccdata	7	7	10	7	31
iNaturalist	7	10	5	10	32
iSpot	6.5	7	6	9	28.5
Zooniverse	9	10	6	10	35
ALA Project Finder	9	7	8	7	31
Minna-no Data	7	6	7	5	25
Österreich forscht - Citizen Science Network Austria (CSNA).	8	5	9	10	32
Cape Citizen Science	8	4	8	8	28
European Citizen Science Association	9	7	7	9	32
Venice Project Center	9	8	9	5	31

Appendix C - Interview Questions for Professor DeWinter

1. Do you have any experience with crowdsourcing platforms?
 - a. If No, switch questions to about data visualization platforms
2. [If Yes to Question 1]: What features are key in a (crowdsourcing) platform?
3. [Following Question 2]: What are the best methods of implementing these features?
4. [Following Question 3]: Can you link us to some examples you love?
5. [Following Question 4]: What are common mistakes made with these platforms?
6. How do we get a sense of Venetian cultural designs?
7. How should we approach making user profiles and journeys?

Appendix D - Interview Questions for Venice Calls

1. How many citizen science projects have you run? (to organizations)
2. What went well, what did not go well?
3. What kinds of feedback have you gotten?
4. Who do you want to use your site?
5. What organization has a model that you think is really good?
6. What kinds of methods did you find attracted the most volunteers?
7. How did you spread the word of your project?

Appendix E - Interview Questions for Professor Harrison

1. What are the best data visualization options?
2. How can we import data visualization options into our platform?
3. What are the strengths and limitations of data visualization?
4. What is the right balance of text and imagery to convey information?
5. How can we limit bias from our data visualizations?
6. Do visualizations across different age groups need to be different? How?
7. What are some resources we can follow to ensure our graphs follow industry standards or best practices?

Appendix F - The Application: Visitor View

The Home Page

The screenshot shows the Venice Citizen Science Platform home page. At the top, there is a navigation bar with the site name, weather information for Venice (15°C), and links for Projects, Community, About, Help, and Calendar. A search bar and a Login link are also present. Below the navigation bar is a large hero image showing people working on a boat in Venice. A text overlay on the left of the hero image reads: "Welcome to the Venice Citizen Science Platform. Explore citizen science projects, interact with data, and help keep Venice, Italy beautiful!".

The main content area is divided into several sections:

- Featured Projects:** A row of three project cards: "LAGOON EYE" (showing a white dome), "COMMERCE POST COVID-19" (showing a storefront), and "CLEAN UP" (showing a person on a boat).
- Our Mission:** A text box stating: "Our mission is to increase the communication of science in Venice by visualizing citizen science data and increasing participation in citizen science data".
- How Does This Work?:** A vertical flow diagram with four steps: "View Current Projects" (magnifying glass icon), "Join Current Projects" (handshake icon), "Visualize Project Data" (chart icon), and "Create New Projects" (pencil icon).
- SUSTAINABLE DEVELOPMENT GOALS:** A grid of 17 icons representing the UN Sustainable Development Goals (SDGs). Below the grid, text reads: "We are proud to support the UN Sustainable Development Goals (SDGs). Each project hosted on this platform will support at least one of them and be tagged with the respective goal."

The footer contains the site name "Venice Citizen Science Platform", a logo, and navigation links for Projects, Community, Calendar, Help, Register, and Settings. Social media icons for Facebook and Instagram are also included.

“How Does This Work?” Page

The screenshot shows the 'How Does This Work?' page on the Venice Citizen Science Platform. The page has a blue header with the logo and navigation links. The main content is divided into four sections, each with an icon and a description:

- View Current Projects:** This platform hosts citizen science projects that address economic, environmental, and social issues in Venice.
- Join Current Projects:** Through the Projects page, you can pick and choose which projects you are interested in! By clicking on a project, you will be able to see how you can participate in the citizen science project.
- Visualize Project Data:** Thanks to your efforts, more and more data will be added to the project. As this occurs, a data visualization to represent that data will be created. It will take the form that best interprets the data such as a bar graph, scatter plot, histogram, etc. After, you can download the data for your own use! All data is open source. If you don't like the
- Create New Projects:** Use the project creation page and fill out the steps to add an existing project or create a new one. Our platform will help to invite the Venetian community, or anyone willing to volunteer, to participate!

The footer contains the platform name, logo, and navigation links.

Community Discussions Page

The screenshot shows the 'Community Discussions' page on the Venice Citizen Science Platform. The page has a blue header with the logo and navigation links. The main content includes a heading and a paragraph:

Community Discussions

Discussions about the platform and projects can be found on our Facebook group. Click [here](#) to view that group.

Below the text is a screenshot of the Venice Citizen Science Facebook group page, showing a photo of people working on a project and the group's profile information.

The footer contains the platform name, logo, and navigation links.

About Venice Citizen Science Platform Page

Venice Citizen Science

Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Projects, Events, and Organizations

Login

About Venice Citizen Science

Our Goal

In order to increase the value of science in the Venetian community, we aim to host a diverse set of citizen science projects that address multiple challenges that Venice is facing.

How

Increasing the communication of science among the Venetian community can have many positive impacts. Not only can it increase science literacy among the community, but that can also translate into support for science based policies that will positively affect the living environment in the long run.

Having a platform to host Venetian citizen science projects can also have a positive effect abroad. The international science community and journalists can have access to the data visualizations and the data collected in these projects to learn more about the Venetian community.

The Venice Citizen Science platform and Venice Calls support the Sustainable Development Goals. As such, all projects on this platform are categorized by one or more goals.

For a brief description of each goal, you can view our page on them or visit <https://sdgs.un.org/goals>

History

This website was designed by four WPI undergraduate students in 2020, with the hopes of it being developed into a fully functioning website one day. Venice Calls, the sponsor for this project, will work to continue working on this application.

Venice Citizen Science Platform

Projects Help Register
Community Calendar Settings
About

f

Sustainable Development Goals Page

Venice Citizen Science
Weather in Venice: 15 °C

Projects Community About Help Calendar
Search for Project, Events, and Organizations
Login

Sustainable Development Goals

For a brief description of each goal, you can view our page on them or visit <https://sdgs.un.org/goals>





1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



Venice Citizen Science Platform


Projects Community About
Help Calendar
Register Settings
 

Calendar Page

Venice Citizen Science
Weather in Venice: 15 °C

Projects Community About Help Calendar
Search for Project, Events, and Organizations
Login

Project Events

December 2020

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10 Plastic Free Venice Clean Up	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

Venice Citizen Science Platform


Projects Community About
Help Calendar
Register Settings
 

37

Search Results Page

Venice Citizen Science
Weather in Venice: 15 °C

Projects Community About Help Calendar
Search for Projects, Events, and Organizations

SEARCHING FOR: VENICE

3 Results in Projects

Clean Up
- Venice Calls -



Clean Up is a program in Venice where we pick up plastic and other debris, categorize it, weigh it, and record where it was picked up.

Commerce Post-COVID
- SerendPT -



This project, in collaboration with WPI, analyzes the impacts of COVID-19 on businesses in Venice.

Lagoon Eye
- Venice Calls -



The Lagoon Eye project monitors air pollution, temperature, and other data sets to learn more about the impacts of climate change.

2 Results in Projects

Our Goal

In order to increase the value of science in the Venetian community, we aim to host a diverse set of citizen science projects that address multiple challenges that **Venice** is facing.

How

In order to increase the quality of the living environment in **Venice** we aim to host projects that support the United Nations's Sustainable Development Goals.

Venice Citizen Science Platform

[Projects](#) [Help](#) [Register](#)
[Community](#) [Calendar](#) [Settings](#)

Explore Projects Page

Venice Citizen Science
Weather in Venice: 15 °C

Projects Community About Help Calendar
Search for Projects, Events, and Organizations

Projects

Filter

STATUS

Active

Completed

CATEGORY

- No Poverty
- Zero Hunger
- Good Health & Well-Being
- Quality Education
- Gender Equality
- Clean Water & Sanitation
- Affordable & Clean Energy
- Decent Work & Economic Growth
- Industry, Innovation, & Infrastructure
- Reduced Inequalities
- Sustainable Cities & Communities
- Responsible Consumption & Production
- Climate Action
- Life Below Water
- Life On Land
- Peace, Justice, & Strong Institutions
- Partnerships For The Goals

ORGANIZATION

- Venice Calls
- Venice Project Center

PARTICIPATION

- Online
- In-person

TYPE

- Classification
- Observation
- Instrumentation

Clean Up
- Venice Calls -



Clean Up is a program in Venice where we pick up plastic and other debris, categorize it, weigh it, and record where it was picked up.

Commerce Post-COVID
- SerendPT -



This project, in collaboration with WPI, analyzes the impacts of COVID-19 on businesses in Venice.

Lagoon Eye
- Venice Calls -



The Lagoon Eye project monitors air pollution, temperature, and other data sets to learn more about the impacts of climate change.

Venice Citizen Science Platform

[Projects](#) [Help](#) [Register](#)
[Community](#) [Calendar](#) [Settings](#)

38

Project “Clean Up” About Page

Venice Citizen Science Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Project, Events, and Organizations Login

Clean Up - Venice Calls -

ABOUT DATA JOIN

10 KG
of plastic
collected so far

About Clean Up

Clean Up is a project hosted by Venice Calls. The lagoon has a lot of plastic waste, therefore Venice Calls conducts clean ups every month to help combat this problem. The plastic is sorted and weighted in order to learn more about this challenge that is facing Venice.

So far, volunteers have collected as much as 500 kg of plastic in the lagoon, making it a much safer place for humans and for wild life.

Organizers

CONTACT INFORMATION: info.venicecalls@gmail.com

Venice Citizen Science Platform

Project “Clean Up” Data Page

Venice Citizen Science Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Project, Events, and Organizations Login

Clean Up - Venice Calls -

ABOUT **DATA** JOIN

Filter

Sort By: Most Recent / Least Recent

Graph Type

Map

Scatterplot

Bar Graph

Pollution by Mass (kg) - Sant' Erasmo -

Amount of Pollution by Type

Plastic	10
Other	0

Bar Graph 29/09/2020

Pollution Type - Sant' Erasmo -

Pollution Types

Plastic	10
Other	0

Bar Graph 29/09/2020

Clean Up Location - Bosco dell' Osellino -

Map 19/09/2020

Pollution by Mass (kg) - Bosco dell' Osellino -

Pollution by Mass (kg)

Plastic	10
Other	0

Bar Graph 19/09/2020

Pollution Type - Bosco dell' Osellino -

Pollution Types

Plastic	10
Other	0

Bar Graph 19/09/2020

Venice Citizen Science Platform

39

Project "Clean Up" Join Page

Venice Citizen Science Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Projects, Events, and Organizations Log In

Clean Up

- Venice Calls -

ABOUT DATA **JOIN**

Events

Has Data

Sant' Erasmo - Venice Calls



Bosco dell'Oseellino - Venice Calls



No Data Yet

Alberoni - Lido - Venice Calls



Cà Roman - Pellestrina - Venice Calls



Marzenego Osellino - Venice Calls



Murano - Venice Calls



Murazzi - Lido - Venice Calls



Murazzi Beach - Lido - Venice Calls



Poveglia - Venice Calls



San Nicolò - Venice Calls



Secca S. Alvise - Venice Calls



Secca S. Michele - Venice Calls



Secca S. Pietro - Venice Calls



Secca Tranchetto - Venice Calls



Torcello - Venice Calls



Join one of our events! All of our events are family friendly - feel free to bring as many people as you want with you! Didn't find a project that you liked? Join our newsletter to be the first one to know about new events!

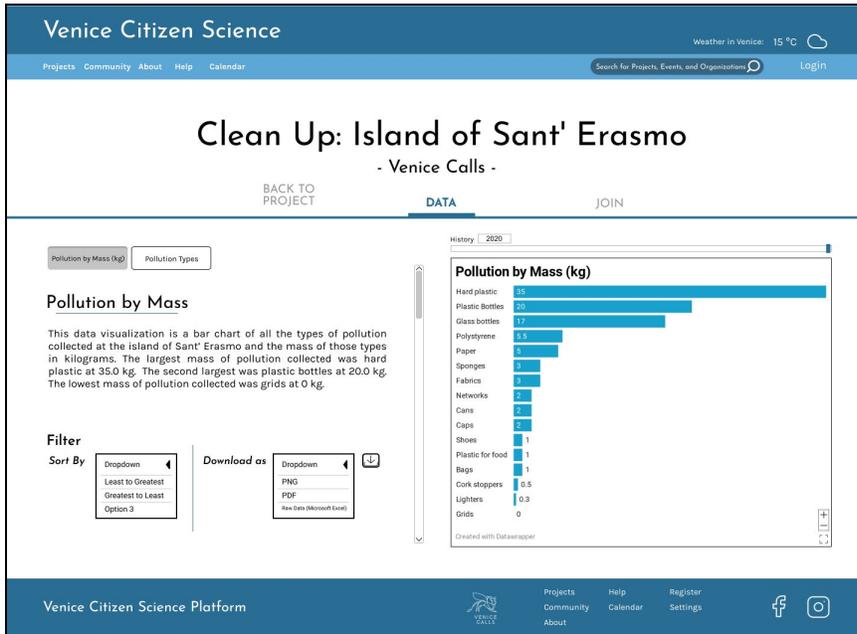
JOIN OUR NEWSLETTER:

Pictures taken during the Clean Up Island of Sant' Erasmo. See more on our Instagram [@venice.calls](#)

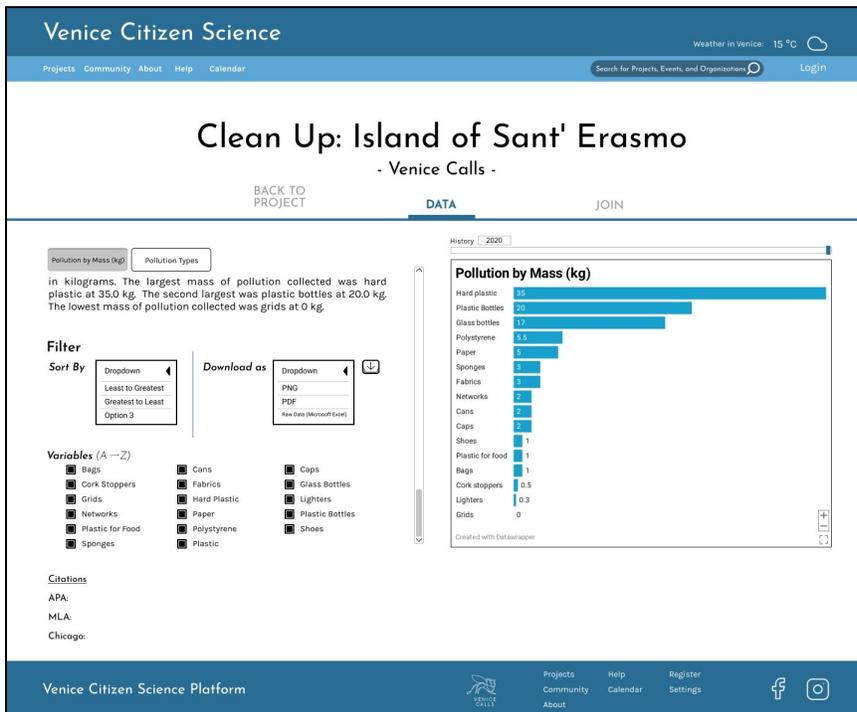


Venice Citizen Science Platform Projects Community About Help Calendar Register Settings  

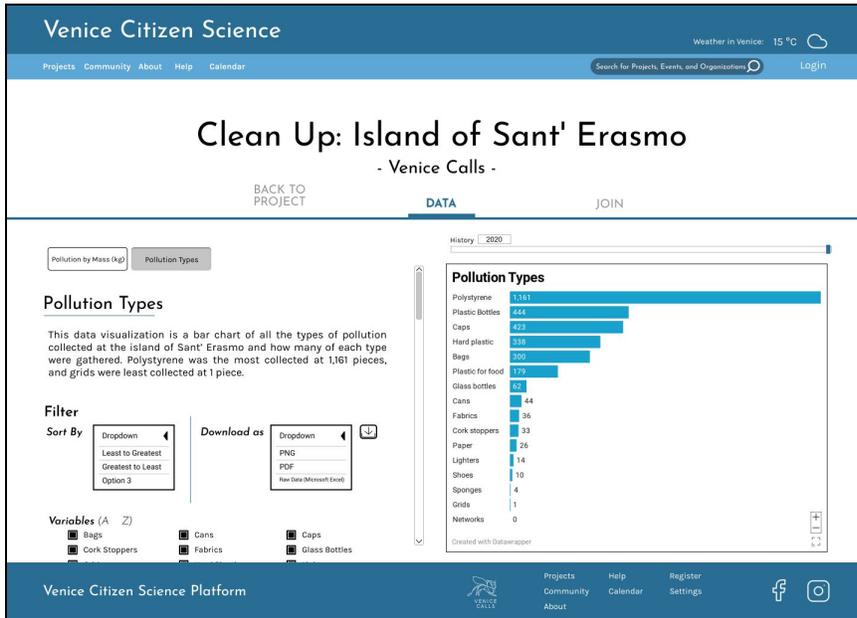
Event “Clean Up: Island of Sant’ Erasmo” Data Page: Pollution by Mass (kg) Database [top]



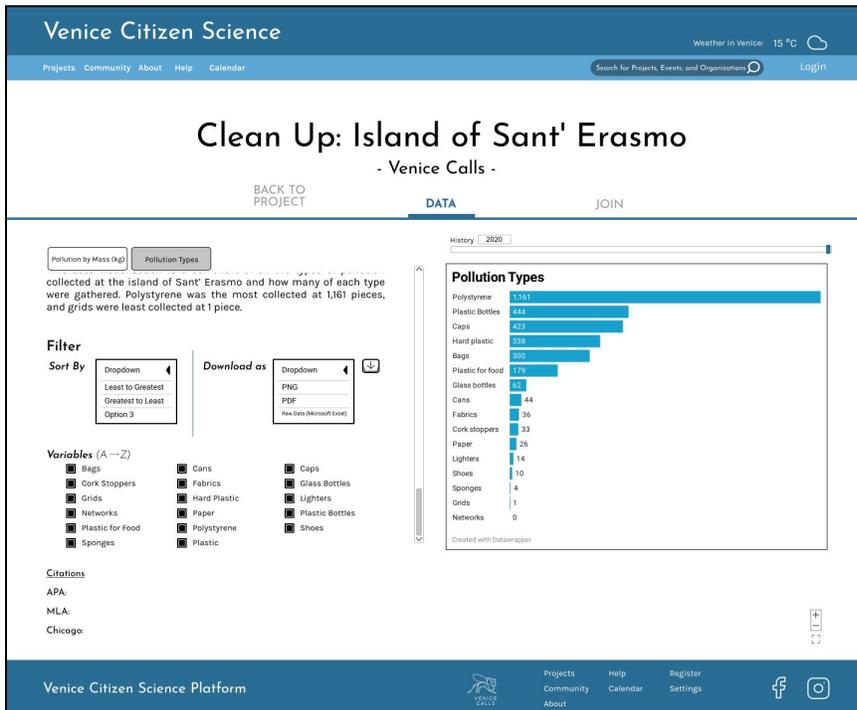
Event “Clean Up: Island of Sant’ Erasmo” Data Page: Pollution by Mass (kg) Database [bottom]



Event “Clean Up: Island of Sant’ Erasmo” Data Page: Pollution Types Database [top]



Event “Clean Up: Island of Sant’ Erasmo” Data Page : Pollution Types Database[bottom]



Event “Clean Up: Island of Sant’ Erasmo” Join Page

Venice Citizen Science

Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Projects, Events, and Organizations

Login

Clean Up: Island of Sant' Erasmo

- Venice Calls -

[BACK TO PROJECT](#) [DATA](#) [JOIN](#)

How

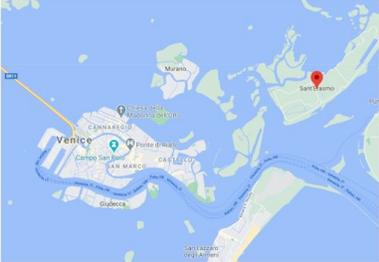
Join us at Sant' Erasmo! You will be picking up plastic pollution in the area so make sure you wear comfortable clothing that is suitable for the weather and you don't mind getting dirty. We will provide trashbags and gloves.

When

September 29, 2020
10:30 am - 1:30 pm

Where

30141 Venezia VE [Directions via Google Maps](#)



Didn't find an event that you liked? Join our newsletter to be the first one to know about new events!

JOIN OUR NEWSLETTER:

Pictures taken during the Clean Up: Island of Sant' Erasmo. See more on our Instagram [@venice.calls](#)

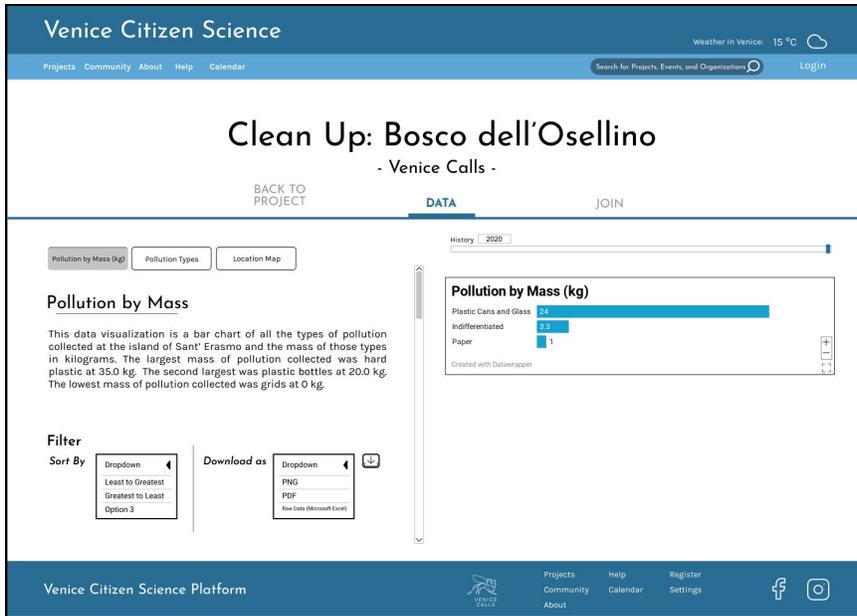


Venice Citizen Science Platform

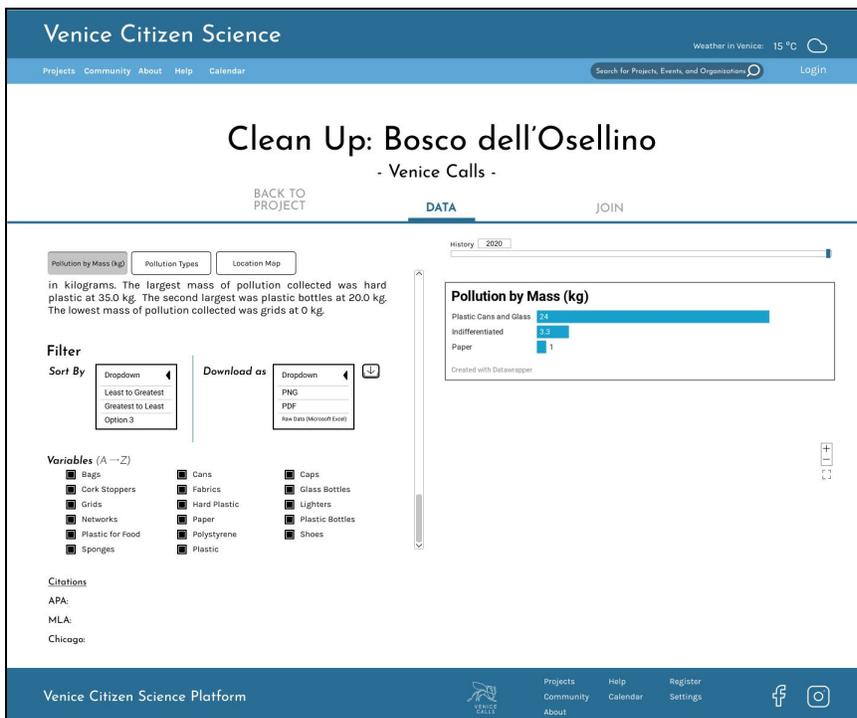
Projects Help Register
Community Calendar Settings
About

f o

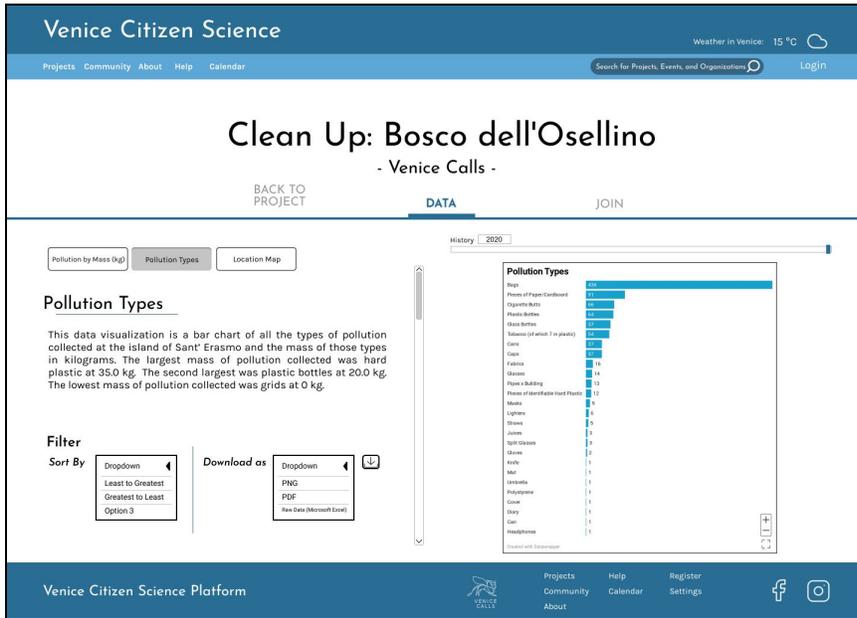
Event “Clean Up: Bosco dell’Osellino” Data Page: Pollution by Mass (kg) Database[top]



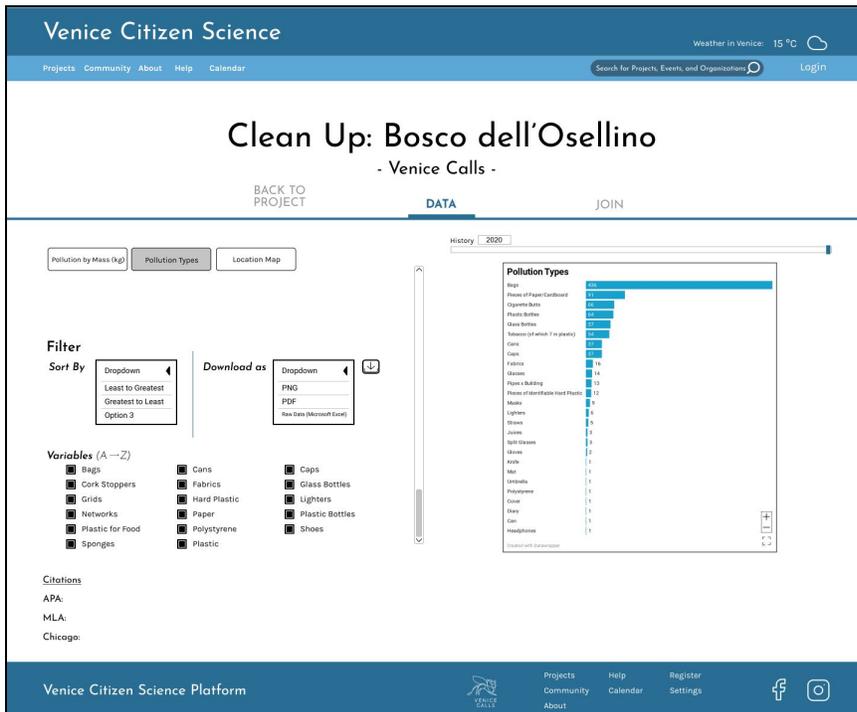
Event “Clean Up: Bosco dell’Osellino” Data Page: Pollution by Mass (kg) Database[bottom]



Event “Clean Up: Bosco dell’Osellino” Data Page: Pollution Types Database [top]



Event “Clean Up: Bosco dell’Osellino” Data Page: Pollution Types Database [bottom]



Event “Clean Up: Bosco dell’Osellino” Data Page: Location Database

Venice Citizen Science Weather in Venice: 15 °C

[Projects](#) [Community](#) [About](#) [Help](#) [Calendar](#) [Login](#)

Clean Up: Bosco dell'Osellino

- Venice Calls -

[BACK TO PROJECT](#) **DATA** [JOIN](#)

[Pollution by Mass \(kg\)](#) [Pollution Types](#) [Location Map](#)

Location Map

This map shows the area at which the clean up took place. The clean up took place at Bosco dell'Osellino is a park on mainland Italy by Forte Marghera.

Download as 

- PNG
- PDF
- [View Data \(Microsoft Excel\)](#)



Venice Citizen Science Platform  [Projects](#) [Help](#) [Register](#)
[Community](#) [Calendar](#) [Settings](#)  

Event “Clean Up: Bosco dell’Osellino” Join Page

Venice Citizen Science Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Projects, Events, and Organizations [Login](#)

Clean Up: Bosco dell’Osellino

- Venice Calls -

[BACK TO PROJECT](#) [DATA](#) [JOIN](#)

How

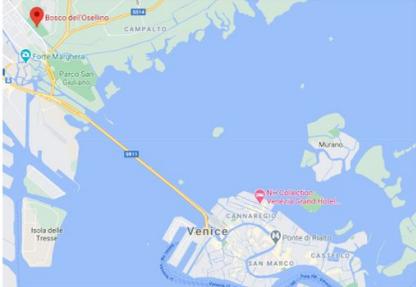
Join us at Sant’ Erasmo! You will be picking up plastic pollution in the area so make sure you wear comfortable clothing that is suitable for the weather and you don't mind getting dirty. We will provide trashbags and gloves.

When

September 19, 2020
10:30 am - 1:30 pm

Where

Via Amerigo Vespucci, 223,
30173 Venezia VE, Italy
[Directions via Google Maps](#)



Didn't find an event that you liked? Join our newsletter to be the first one to know about new events!

JOIN OUR NEWSLETTER:

Pictures taken during the Clean Up: Island of Sant' Erasmo. See more on our Instagram [@venice.calls](#)



Venice Citizen Science Platform [Projects](#) [Help](#) [Register](#)
[Community](#) [Calendar](#) [Settings](#)

Event “Clean Up: Island of Sant’Erasmus” Join Page - Classification

Venice Citizen Science Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Projects, Events, and Organizations [Login](#)

Clean Up: Island of Sant' Erasmo

- Venice Calls -

[ABOUT](#) [DATA](#) [JOIN](#)

Join our classification efforts by visiting out project on Zooniverse!

[ZOOVERSE LINK](#)

Couldn't find something you were interested in? Join our newsletter to be the first one to know about new events!

JOIN OUR NEWSLETTER:

Pictures taken during the Clean Up: Island of Sant' Erasmo. See more on our Instagram [@venice.calls](#)





Project “Commerce Post-COVID” About Page

Venice Citizen Science Weather in Venice: 15 °C

Projects Community About Help Calendar [Login](#)

Commerce Post-COVID

- SerendPT -

[ABOUT](#) [DATA](#) [JOIN](#)



About Commerce Post-COVID

Clean Up is a project hosted by Venice Calls. The lagoon has a lot of plastic waste, therefore Venice Calls conducts clean ups every month to help combat this problem. The plastic is sorted and weighted in order to learn more about this challenge that is facing Venice

So far, volunteers have collected as much as 500 kg of plastic in the lagoon, making it a much safer place for humans and for wild life.

Organizers

CONTACT INFORMATION: contacts@serendpt.net

Venice Citizen Science Platform  [Projects](#) [Help](#) [Register](#)
[Community](#) [Calendar](#) [Settings](#)  

Project “Lagoon Eye” About Page

Venice Citizen Science Weather in Venice: 15 °C

Projects Community About Help Calendar [Login](#)

Lagoon Eye

- Venice Calls -

[ABOUT](#) [DATA](#) [JOIN](#)



About Plastic Free Venice

Plastic Free Venice is a project hosted by Venice Calls. The lagoon has a lot of plastic waste, therefore Venice Calls conducts clean ups every month to help combat this problem. The plastic is sorted and weighted, in order to learn more about this challenge that is facing Venice

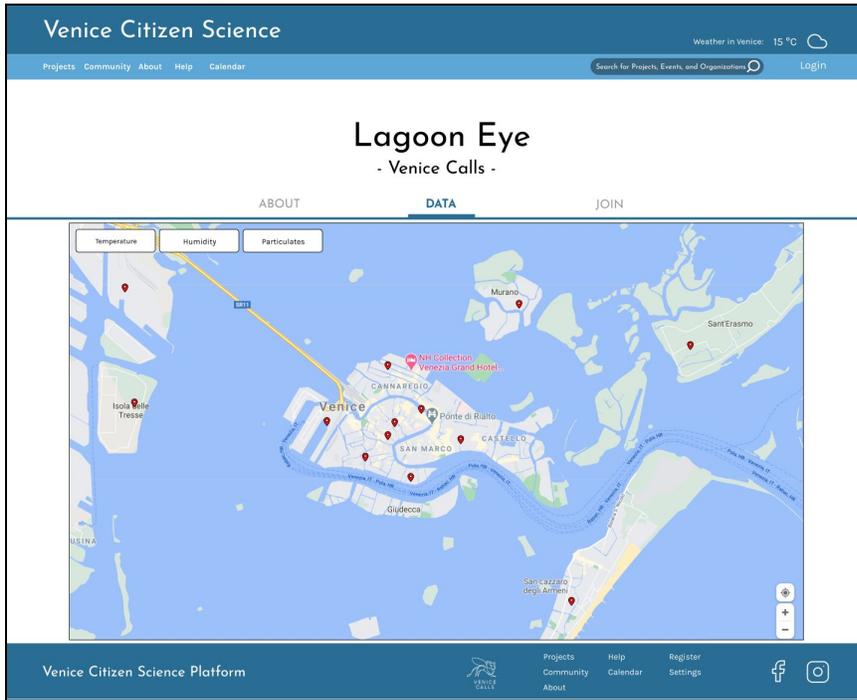
So far, volunteers have collected as much as 500 kg of plastic in the lagoon, making it a much safer place for humans and for wild life.

Organizers

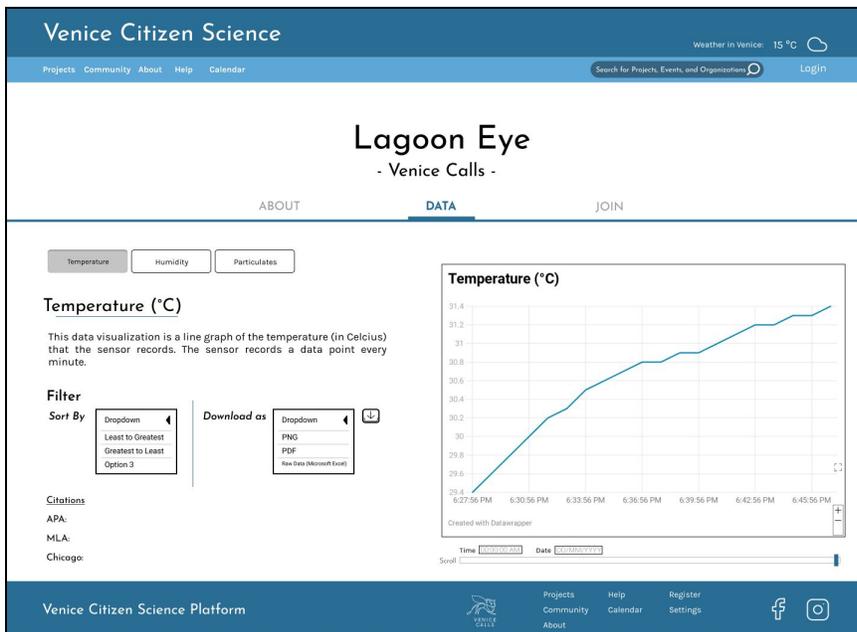
CONTACT INFORMATION: info.venicecalls@gmail.com

Venice Citizen Science Platform  [Projects](#) [Help](#) [Register](#)
[Community](#) [Calendar](#) [Settings](#)  

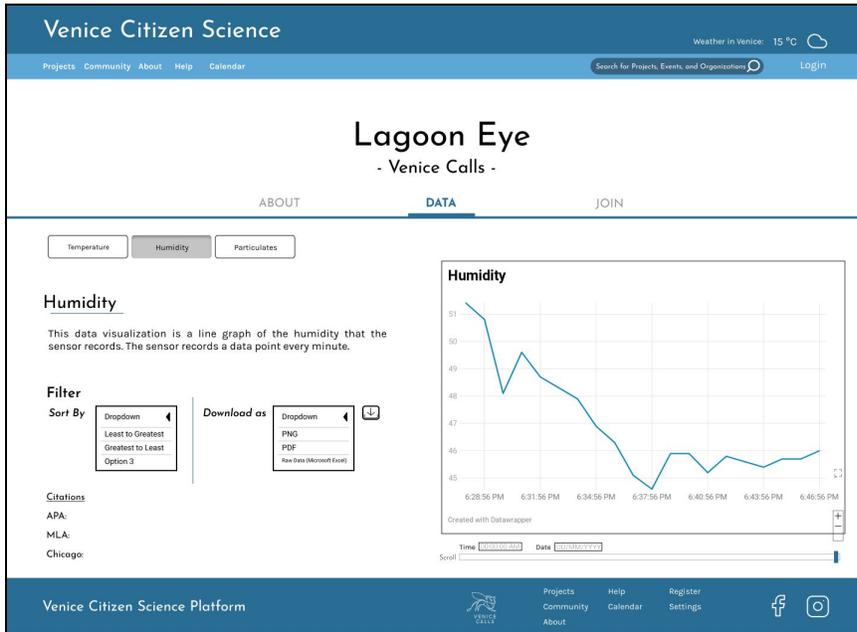
Project “Lagoon Eye” Data Page: Location of Sensors Database



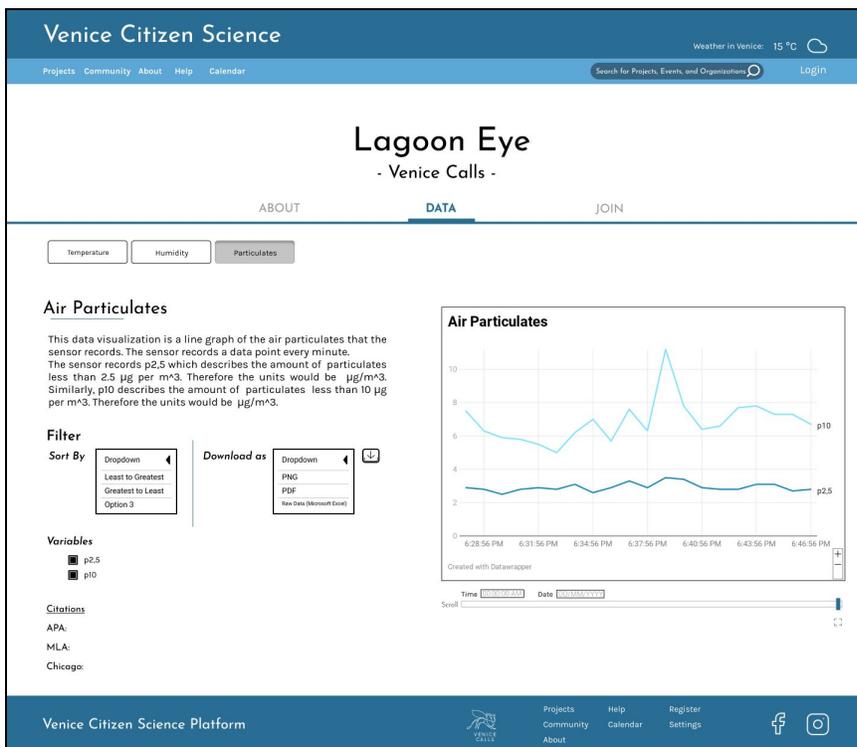
Project “Lagoon Eye” Data Page: Temperature Database



Project “Lagoon Eye” Data Page: Humidity Database



Project “Lagoon Eye” Data Page: Particulates Database



Project “Lagoon Eye” Join Page

Venice Citizen Science

Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations

Login

Lagoon Eye

- Venice Calls -

ABOUT DATA **JOIN**

How

Joining is easy! Simply submit your address below and sensor will be shipped premodel Instructions on how connect to the internet will be included, and once those are done, it will begin to upload data.

Address:

JOIN OUR NEWSLETTER:

Venice Citizen Science Platform

Projects Help Register
Community Calendar Settings
About

f o

Organization “Venice Calls” Page

Venice Citizen Science

Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations

Login

Venice Calls



Mission

Venice Calls wants to give its contribution to creating and supporting new projects with all those realities that pursue a sustainable city model: economically, socially and environmentally. We believe that Venice increasingly represents a meeting and starting point for a society capable of facing the challenges of the 21st century on a global level. The destiny of Venice is united with the destiny of the Earth.

Projects

Clean Up
- Venice Calls -



Clean Up is a program in Venice where we pick up plastic and other debris, categorize it, weigh it, and record where it was picked up.

Lagoon Eye
- Venice Calls -



The Lagoon Eye project monitors air pollution, temperature, and other data sets to learn more about the impacts of climate change.

Email: info.venicecalls@gmail.com

Website: <https://www.venicecalls.com/>

Venice Citizen Science Platform

Projects Help Register
Community Calendar Settings
About

f o

Organization “SerenDPT” Page

The screenshot shows the organization page for SerenDPT. At the top, the header includes "Venice Citizen Science" and "Weather in Venice: 15 °C". Navigation links for "Projects", "Community", "About", "Help", and "Calendar" are visible. A search bar and a "Login" link are also present. The main content area features the SerenDPT logo, which is a red shape with a grid pattern and the text "SerenDPT". Below the logo, contact information is provided: "Email: contacts@serendpt.net" and "Website: https://serendpt.net/en". The "Mission" section states: "Founded in 2017, SerenDPT is a Benefit Corporation with a clear mission: create high profile job in Venice by developing Made in Venice tech products, in order to solve some of the city's problems in several strategic areas and then sell those solutions in the rest of the world." The "Projects" section highlights a project titled "Commerce Post-COVID - SerenDPT -" with a thumbnail image of a storefront. A description below the image reads: "This project, in collaboration with WPL analyzes the impacts of COVID-19 on businesses in Venice." The footer contains the "Venice Citizen Science Platform" logo, a navigation menu with "Projects", "Community", "About", "Help", "Calendar", "Register", and "Settings", and social media icons for Facebook and Instagram.

Log In Page

The screenshot shows the login page for the Venice Citizen Science platform. The header is identical to the organization page, showing "Venice Citizen Science" and "Weather in Venice: 15 °C". The main content area is titled "Log in to Venice Citizen Science". It features a login form with "Email" and "Password" input fields, a green "Log in with your email" button, and links for "Don't have an account? Register" and "Forgot your password?". Below the form are four social login options: "Continue with Facebook", "Sign in with Google", "Sign in with Microsoft", and "Sign in with Twitter". The footer is also identical to the organization page, displaying the platform name, navigation menu, and social media icons.

Register A New User Page

The screenshot shows the 'Register' page of the Venice Citizen Science platform. The page has a dark blue header with the logo and navigation links. The main content area is white and contains a registration form with fields for 'Email' and 'Password', a green 'Register with your email' button, and social media login options for Facebook, Google, Microsoft, and Twitter. The footer includes the platform name, a logo, and a list of navigation links.

Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations Login

Register

Email

Password

Register with your email

Continue with Facebook

Sign in with Google

Sign in with Microsoft

Sign in with Twitter

Venice Citizen Science Platform

Projects Help Register
Community Calendar Settings
About

Account Confirmation Sent Page

The screenshot shows the 'Email Confirmation Pending' page of the Venice Citizen Science platform. The page has a dark blue header with the logo and navigation links. The main content area is white and contains a confirmation message: 'Email Confirmation Pending' and 'You should receive an email to confirm your account shortly'. The footer includes the platform name, a logo, and a list of navigation links.

Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations Login

Email Confirmation Pending

You should receive an email to confirm your account shortly

Venice Citizen Science Platform

Projects Help Register
Community Calendar Settings
About

Password Reset Page

The screenshot shows the 'Password Reset' page. At the top, there is a dark blue header with the 'Venice Citizen Science' logo on the left, weather information 'Weather in Venice: 15 °C' on the right, and navigation links 'Projects', 'Community', 'About', 'Help', and 'Calendar'. Below the header is a search bar and a 'Login' link. The main content area is white and features the title 'Password Reset' in a large, bold font. Below the title, there is a prompt: 'Please enter the email address associated with your account'. This is followed by a text input field with the placeholder text 'Email'. Below the input field is a green button labeled 'Request password reset'. At the bottom of the page, there is a dark blue footer containing the text 'Venice Citizen Science Platform', the Venice Citizen Science logo, and navigation links for 'Projects', 'Community', 'About', 'Help', 'Calendar', 'Register', and 'Settings'. There are also social media icons for Facebook and Instagram.

Password Reset Request Sent Page

The screenshot shows the 'Password Reset Request Sent' page. It has the same header and footer as the previous page. The main content area is white and features the title 'Password Reset Request Sent' in a large, bold font. Below the title, there is a message: 'You should receive an email to reset your password shortly'. The footer is identical to the previous page, including the 'Venice Citizen Science Platform' text, logo, and navigation links.

Appendix G - The Application: Logged In View

All the frames in Appendix E also exist in this appendix. The only difference is the header and footer, seen below. Only frames not related to the Visitor View will be featured in Appendix F.

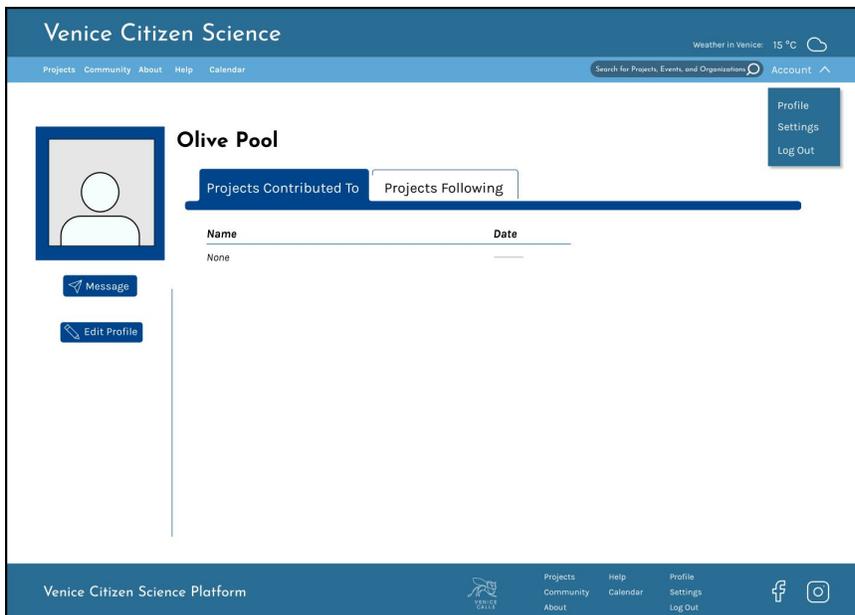
Header For Logged In



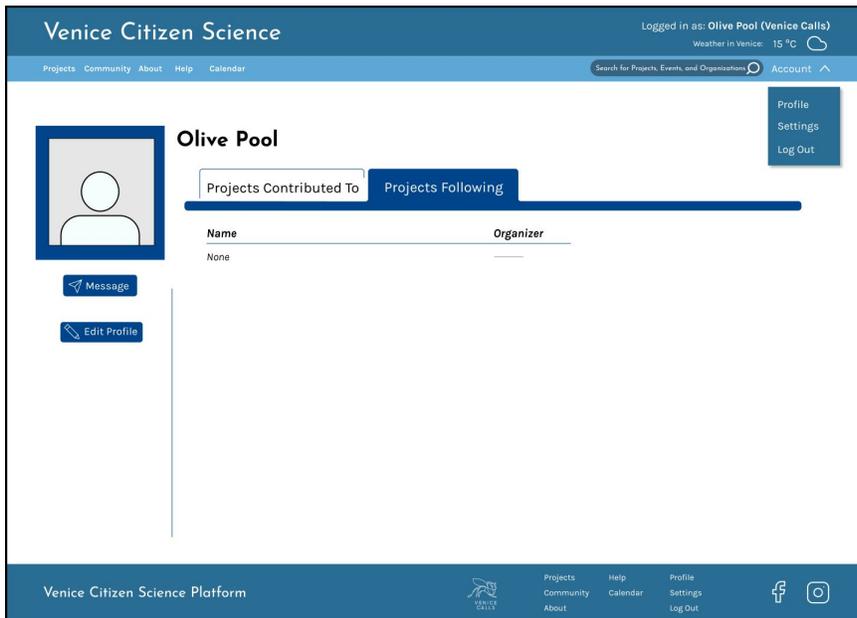
Footer For Logged In



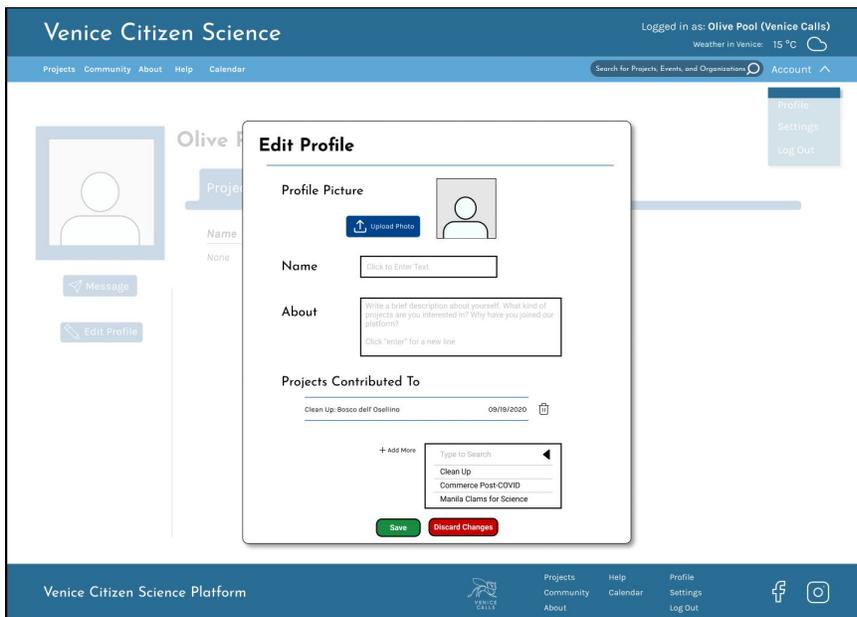
Default User Profile Page 1



Default User Profile Page 2



Default Edit User Profile Page



Filled In Edit User Profile Page

Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations Account

Edit Profile

Profile Picture 

Upload Photo

Name

About

Projects Contributed To

Clean Up: Bosco dell' Osellino	09/19/2020
Clean Up: Island of Sant' Erasmo	09/29/2020

+ Add More

Type to Search

- Clean Up
- Commerce Post-COVID
- Manila Clams for Science

Save Discard Changes

Venice Citizen Science Platform

Projects Help Profile
Community Calendar Settings
About Log Out

Edited User Profile Page 1

Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations Account

Olive Pool

Profile Settings Log Out

Projects Contributed To Organizations

Name	Date
Clean Up: Island of Sant' Erasmo	09/29/2020
Clean Up: Bosco dell' Osellino	09/19/2020

Message

Hello! My name is Olive I was born and raised in Venice and love our home.

Venice Calls Affiliate

Edit Profile

Venice Citizen Science Platform

Projects Help Profile
Community Calendar Settings
About Log Out

Edited User Profile Page 2

The screenshot shows the user profile page for Olive Pool. The header includes the Venice Citizen Science logo, navigation links (Projects, Community, About, Help, Calendar), a search bar, and the user's login status (Logged in as: Olive Pool (Venice Calls)). The profile section features a profile picture, a 'Message' button, a bio, and a 'Venice Calls Affiliate' badge. The main content area is titled 'Venice Calls Affiliate' and includes a 'CREATE NEW ORGANIZATION' button. The footer contains the platform name, navigation links, and social media icons.

Venice Citizen Science

Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations Account

Olive Pool

Projects Contributed To Organizations

Message

Hello! My name is Olive. I was born and raised in Venice and love our home.

Venice Calls Affiliate

Edit Profile

CREATE NEW ORGANIZATION

Venice Citizen Science Platform

Projects Help Profile
Community Calendar Settings
About Log Out

Edit Project About Page

The screenshot shows the 'About' page for the 'Clean Up' project. The header includes the Venice Citizen Science logo, navigation links, a search bar, and the user's login status. The project title 'Clean Up - Venice Calls' is prominently displayed. The 'ABOUT' tab is selected, showing a description of the project, a statistic (500 KG of plastic collected so far), and the organizer's contact information. The footer contains the platform name, navigation links, and social media icons.

Venice Citizen Science

Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations Account

Clean Up
- Venice Calls -

ABOUT DATA JOIN

About Clean Up Edit

500 KG
of plastic
collected so far

Clean Up is a project hosted by Venice Calls. The lagoon has a lot of plastic waste, therefore Venice Calls conducts clean ups every month to help combat this problem. The plastic is sorted and weighted in order to learn more about this challenge that is facing Venice.

So far, volunteers have collected as much as 500 kg of plastic in the lagoon, making it a much safer place for humans and for wild life.

Organizer

CONTACT INFORMATION: info.venicecalls@gmail.com

Venice Citizen Science Platform

Projects Help Profile
Community Calendar Settings
About Log Out

Edit Project About Confirm Page

Venice Citizen Science

Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations Account

Clean Up

- Venice Calls -

Profile Settings Log Out

ABOUT DATA JOIN

500 KG
of plastic collected so far

About Clean Up Confirm

Clean Up is a project hosted by Venice Calls. The lagoon has a lot of plastic waste, therefore Venice Calls conducts clean ups every month to help combat this problem. The plastic is sorted and weighed in order to learn more about this challenge that is facing Venice.

So far, volunteers have collected as much as 500 kg of plastic in the lagoon, making it a much safer place for humans and for wild life.

Organizer

CONTACT INFORMATION: info.venicecalls@gmail.com

Venice Citizen Science Platform

Projects Help Register
Community Calendar Settings
About

Edit Project Data Page

Venice Citizen Science

Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar

Search for Project, Events, and Organizations Account

Clean Up: Island of Sant' Erasmo

- Venice Calls -

Profile Settings Log Out

ABOUT DATA JOIN

Pollution by Mass (kg) Pollution Types Upload New Data

Pollution by Mass Edit About

This data visualization is a bar chart of all the types of pollution collected at the island of Sant' Erasmo and the mass of those types in kilograms. The largest mass of pollution collected was hard plastic at 35.0 kg. The second largest was plastic bottles at 20.0 kg. The lowest mass of pollution collected was grids at 0 kg.

Filter

Sort By: Dropdown (Least to Greatest, Greatest to Least, Option 3)

Download as: PNG, PDF, Raw Data (Microsoft Excel)

Pollution by Mass (kg)

Pollution Type	Mass (kg)
Hard plastic	35
Plastic bottles	20
Glass bottles	17
Polystyrene	15
Paper	5
Sponges	3
Fabrics	3
Networks	2
Cans	2
Caps	2
Shoes	1
Plastic for food	1
Bags	1
Cork stoppers	0.5
Lighters	0.3
Grids	0

Created with Datawrapper

Venice Citizen Science Platform

Projects Help Profile
Community Calendar Settings
About Log Out

All project data pages will have the same two buttons of “Edit About” and “Upload New Data” and they will be in the same positions regardless of project/data set. The other example project frames will not be included in this appendix.

Edit Project Join Page

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Projects, Events, and Organizations Account ^

Clean Up

- Venice Calls -

Profile
Settings
Log Out

ABOUT DATA **JOIN**

Events

ADD EVENT

Island of Sant' Erasmo	29-09-2020	SHOW	Edit Event
Bosco dell'Osellino	19-09-2020	HIDE	Edit Event

Add Images

Image Description

Helvetica Neue 12px B I U

Pictures taken during the Clean Up: Island of Sant' Erasmo. See more on our Instagram [@venice.calls](#)

image1.jpeg

image2.jpeg

image3.jpeg

Venice Citizen Science Platform

VENICE CALLS

Projects
Community
About

Help
Calendar

Profile
Settings
Log Out

f o

Edit Event Join Page

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Projects, Events, and Organizations Account

Clean Up: Island of Sant' Erasmo

- Plastic Free Venice Project -

Profile
Settings
Log Out

ABOUT DATA **JOIN**

Date

Start Time AM PM

End Time AM PM

Location

Add Images

Image Description

Helvetica Neue 12px B I U

Pictures taken during the Clean Up: Island of Sant' Erasmo. See more on our Instagram [@venice.calls](#)

image1.jpeg

image2.jpeg

image3.jpeg

Venice Citizen Science Platform  [Projects](#) [Help](#) [Profile](#)
[Community](#) [Calendar](#) [Settings](#)
[About](#) [Log Out](#)  

Project Creation Page: Step 1

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Project, Events, and Organizations Account

PROJECT CREATION (1/6)

You may pause your progress at any point and it will automatically be saved for future reference.

Title of Project: About

Time to take the first step into creating and setting up your project! First, give your project a catchy name! Make it short and sweet: you want the name to be simple to remember but still descriptive enough to be interesting.

For example, consider "Lagoon Eye:" it has two words and evokes a sense of mystery! What is the "eye"? How would it be watching the Venetian lagoon? The lagoon itself might be compelling enough to draw viewers to check out the project!

Next >>

Venice Citizen Science Platform

Project Creation Page: Step 2

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Project, Events, and Organizations Account

PROJECT CREATION (2/6)

You may pause your progress at any point and it will automatically be saved for future reference.

Type of Project: About

Now is the time to categorize your project! All projects are organized by UNESCO Sustainable Development Goals. Please read about the goals at <https://sdgs.un.org/goals> and then select which goal you think your project falls under. You can pick up to three goals!

"What if I'm not sure if my project fits under the goal I chose?" No problem. Before public viewing, your project will undergo a revision by our team for accuracy and missing information.

Sustainable Development Goals (you can select up to three goals)

<input type="checkbox"/> No Poverty	<input type="checkbox"/> Industry, Innovation, & Infrastructure
<input type="checkbox"/> Zero Hunger	<input type="checkbox"/> Reduced Inequalities
<input type="checkbox"/> Good Health & Well-Being	<input type="checkbox"/> Sustainable Cities & Communities
<input type="checkbox"/> Quality Education	<input type="checkbox"/> Responsible Consumption & Production
<input type="checkbox"/> Gender Equality	<input type="checkbox"/> Climate Action
<input type="checkbox"/> Clean Water & Sanitation	<input type="checkbox"/> Life Below Water
<input type="checkbox"/> Affordable & Clean Energy	<input type="checkbox"/> Life On Land
<input type="checkbox"/> Decent Work & Economic Growth	<input type="checkbox"/> Peace, Justice, & Strong Institutions
	<input type="checkbox"/> Partnerships For The Goals

<< Last Next >>

Venice Citizen Science Platform

Project Creation Page: Step 3

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Projects, Events, and Organizations Account

PROJECT CREATION (3/6)

You may pause your progress at any point and it will automatically be saved for future reference.

Profile
Settings
Log Out

Background of Project: About

How and why was the project created? What is the project's goal? This will be what makes or breaks someone from joining your project! You have to convince them this project is working to a good and/or interesting cause and how their efforts will help the project.

This section has been broken into three parts - Mission Statement, Brief History, and Citizen Impact - however, it will appear as one section under the "About" tab in the project page.

Mission Statement
Begin it with the mission statement of the project: 2-3 sentences about what the end goal of the project is.

Click to Enter Text

Brief History
Then, a brief history. In a short paragraph (~5 sentences) describe how the project was formed. What inspired you to create this project?

Click to Enter Text

Citizen Impact
Finally, finish with the citizen impact! This is what will decide it for the volunteer. They want to know their time and energy is being used and they want to know how it is being used. So describe what the data gathered will be used for! Also say why they are important. Why did you choose citizen science over doing it yourself? Once you have some data, you can edit the project "about" section to describe the project's impact thus far.

Click to Enter Text
Select "Enter" to skip to the write on a new line

« Last Next »

Venice Citizen Science Platform  Projects Help Profile
Community Calendar Settings
About Log Out  

Project Creation Page: Step 4

The screenshot shows the Venice Citizen Science Project Creation page at Step 4. The header includes the logo, navigation links (Projects, Community, About, Help, Calendar), and user information (Logged in as: Olive Pool (Venice Calls), Weather in Venice: 15 °C). The main heading is "PROJECT CREATION (4/6)". Below it, a note states: "You may pause your progress at any point and it will automatically be saved for future reference." The section is titled "Classify Your Project" and asks: "What type of project is it? Please choose one. This platform defines three main types of citizen science projects:". Three options are listed with checkboxes: "Classification - When citizens organize data, usually in the form of photos. ex. Counting the number of a species in a photo or identifying objects in a photo", "Data Collection - When citizens physically collect data. ex. Taking photos of observations, collecting pollution that will be weighed and categorized", and "Instrumentation - When citizens host sensors that record data. ex. Hosting a sensor that records air pollution in the form of air particulates". Navigation buttons "Last" and "Next" are visible, along with a progress bar. The footer contains the platform name, logo, and navigation links.

Project Creation Page: Step 5

The screenshot shows the Venice Citizen Science Project Creation page at Step 5. The header is identical to Step 4. The main heading is "PROJECT CREATION (5/6)". Below it, the same note about pausing progress is present. The section is titled "Involvement: JOIN - HOW" and asks: "What will your volunteers be doing? Do they need to go to a physical location? Are they organizing data online? Are they hosting an instrument that collects data in the environment? You need to explain this so volunteers know what is required of them. Get them prepared! Tell them what they should wear and bring." A text input field with the placeholder "Click to Enter Text" is provided. Navigation buttons "Last" and "Next" are visible, along with a progress bar. The footer is identical to Step 4.

Project Creation Page: Step 6

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Project, Events, and Organization Account

PROJECT CREATION (6/6)

You may pause your progress at any point and it will automatically be saved for future reference.

Time and Place: Join - When and Where

Final step! If your project involves citizens going to a physical location, please give the location and start-end times they will be there.

Date

Start Time AM PM

End Time AM PM

Location

[<< Last](#) [Publish](#)

Venice Citizen Science Platform  Projects Help Profile
Community Calendar Settings
About Log Out  

Event Creation Page

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Project, Events, and Organization Account

EVENT CREATION

Title of Event:

Project:

Type of Event:

Description of the Event:

[SUBMIT](#)

Venice Citizen Science Platform  Projects Help Register
Community Calendar Settings
About  

Organization Creation Page

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Project, Events, and Organizations Account ^

Organization Creation Steps

Title of Organization:

Organization Mission

Contact Information (leave blank if unavailable)

Email:

Phone Number:

Organization Website:

Venice Citizen Science Platform  Projects Help Profile
Community Calendar Settings
About Log Out  

Organization “Venice Calls” Page

Venice Citizen Science Logged in as: Olive Pool (Venice Calls)
Weather in Venice: 15 °C

Projects Community About Help Calendar Search for Project, Events, and Organizations Account ^

Venice Calls

[Edit Organization Info](#)

[Profile](#)
[Settings](#)
[Log Out](#)



Mission

Venice Calls wants to give its contribution to creating and supporting new projects with all those realities that pursue a sustainable city model: economically, socially and environmentally. We believe that Venice increasingly represents a meeting and starting point for a society capable of facing the challenges of the 21st century on a global level. The destiny of Venice is united with the destiny of the Earth.

Projects [Create New Project](#)

Clean Up - Venice Calls -



Clean Up is a program in Venice where we pick up plastic and other debris, categorize it, weigh it, and record where it was picked up.

Lagoon Eye - Venice Calls -

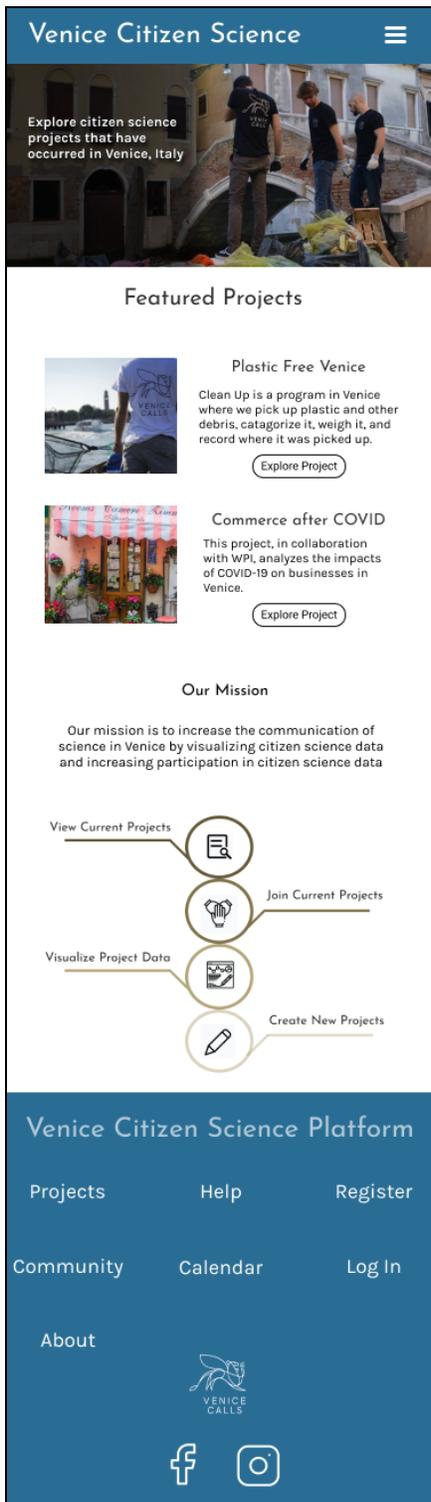


The Lagoon Eye project monitors air pollution, temperature, and other data sets to learn more about the impacts of climate change.

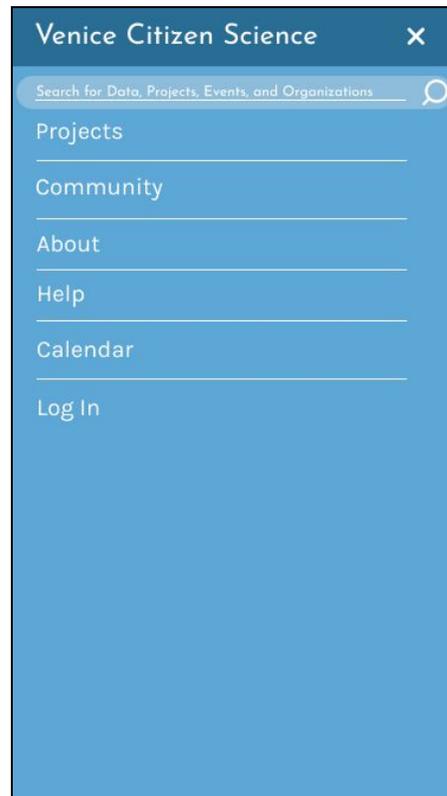
Venice Citizen Science Platform  Projects Help Profile
Community Calendar Settings
About Log Out  

Appendix H - The Application: Mobile View

The Home Page



Navigation Bar



The About Page

Venice Citizen Science 

About Venice Citizen Science

Our Goal

In order to increase the value of science in the Venetian community, we aim to host a diverse set of citizen science projects that address multiple challenges that Venice is facing,

How

Increasing the communication of science among the Venetian community can have many positive impacts. Not only can it increase science literacy among the community, but that can also translate into support for science based policies that will positively affect the living environment in the long run.

Having a platform to host Venetian citizen science projects can also have a positive effect abroad. The international science community and journalists can have access to the data visualizations and the data collected in these projects to learn more about the Venetian community.

Get Involved Page

Venice Citizen Science 

Get Involved

For Organizations:

- [Start or Add a Project to Our Site](#)
 - Use the project creation page and fill out the steps to add an existing project or create a new one. Our platform will help to invite the Venetian community, or anyone willing to volunteer, to participate!
- [Provide a collection of observations](#)
 - Provide a collection of the data that participants have provided on our site.
- [Download and share to VCSP](#)
 - Upload datasets relative to the projects and please do not hesitate to be active with participants in the VCSP discussion board!

For Scientists:

- [Feel free to analyze raw data](#)
 - Organizations will upload datasets that can be looked at under the data tab in the "View Current Projects" section on the homepage. This raw data is available for downloads in order to help you with your research!

The Help Page

Venice Citizen Science ☰

Need Help?

Listed below are some general questions asked by first-time users of our platform.

How do I cite the platform and/or data on the platform?

- When referring to the Venice Citizen Science platform in general please include the vcs.com URL somewhere in the article along with the access date.
- For specific projects or data sets, please include the:
 - Project Name/Title of Data Set
 - Project Organizer as the author
 - vcs.com URL
 - Date of Access

How do I download/upload data?

- Any user can download data by clicking the "View Current Projects" button on the homepage. This button will take you to an organized list of projects that we have on our platform and if you click on a specific project, the "Data" tab will take you to the raw data of the project where it can be downloaded. As for uploading data,

Project Filter Options

Venice Citizen Science ☰

Cancel
Apply Filter

STATUS

Active

Completed

CATEGORY

- No Poverty
- Zero Hunger
- Good Health & Well-Being
- Quality Education
- Gender Equality
- Clean Water & Sanitation
- Affordable & Clean Energy
- Decent Work & Economic Growth
- Industry, Innovation, & Infrastructure
- Reduced Inequalities
- Sustainable Cities & Communities
- Responsible Consumption & Production

The Project Discovery Page

Venice Citizen Science ☰

▼ Filter
Projects
Clear Filter

Clean Up
- Venice Calls -

Clean Up is a program in Venice where we pick up plastic and other debris, categorize it, weigh it, and record where it was picked up.

Commerce Post-COVID
- SerenDPT -

This project, in collaboration with WPI, analyzes the impacts of COVID-19 on businesses in Venice.

Lagoon Eye
- Venice Calls -

The Lagoon Eye project monitors air pollution, temperature, and other data sets to learn more about the impacts of climate change.

Venice Citizen Science Platform

Projects
Help
Register

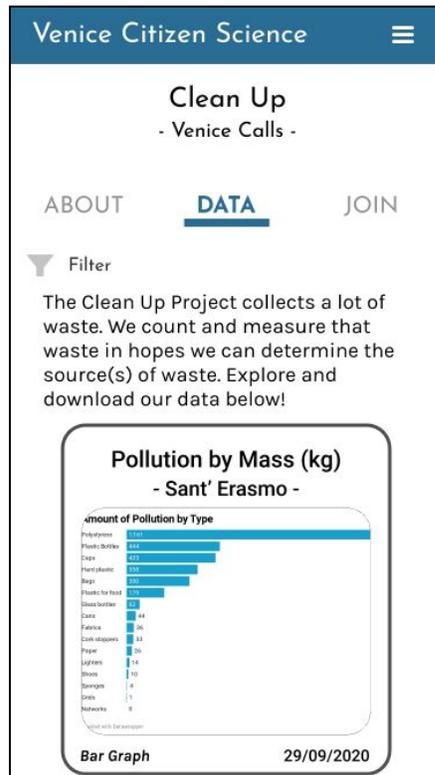
Community
Calendar
Log In

About

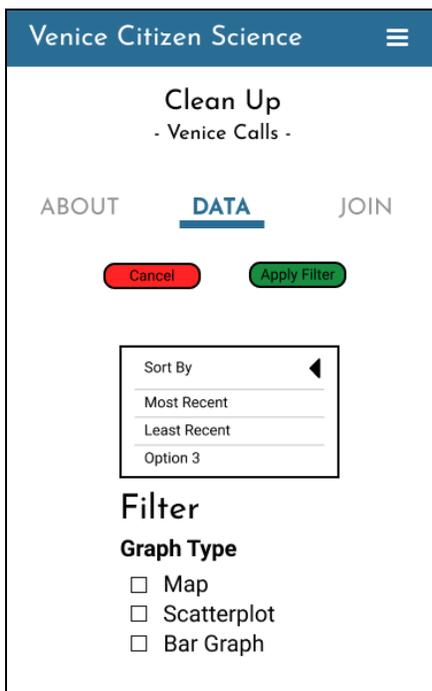
Project “Clean Up” About Page



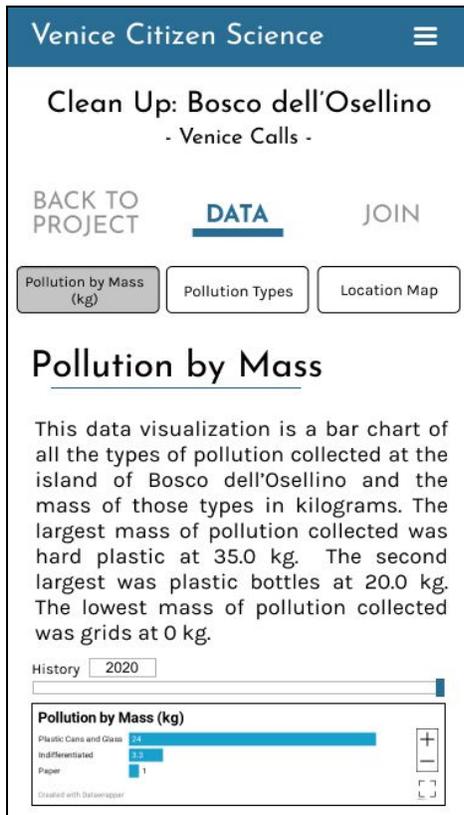
Project “Clean Up” Data Discovery Page



Project “Clean Up” Data Filter Options



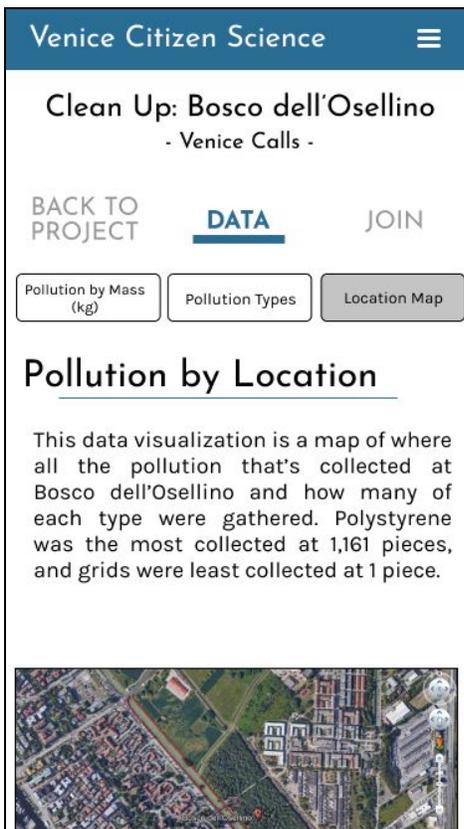
Event “Bosco” Pollution Mass Page



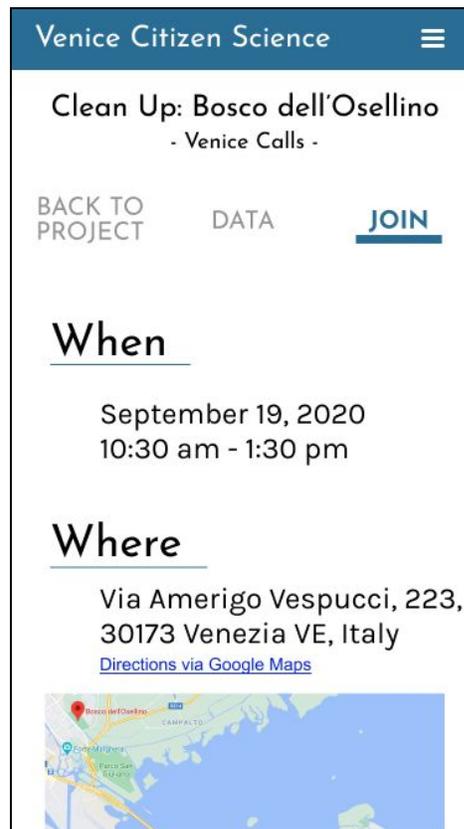
Event “Bosco” Pollution Type Page



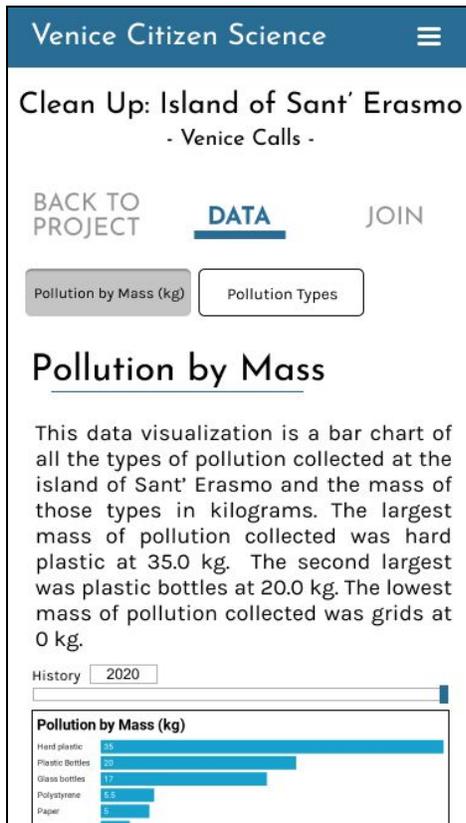
Event “Bosco” Location Map



Event “Bosco” Join Page



Event “Sant’ Erasmo” Pollution Mass



Event “Sant’ Erasmo” Pollution Types



Event “Sant’ Erasmo” Join Page

Venice Citizen Science

Clean Up: Island of Sant’ Erasmo
- Venice Calls -

BACK TO PROJECT DATA JOIN

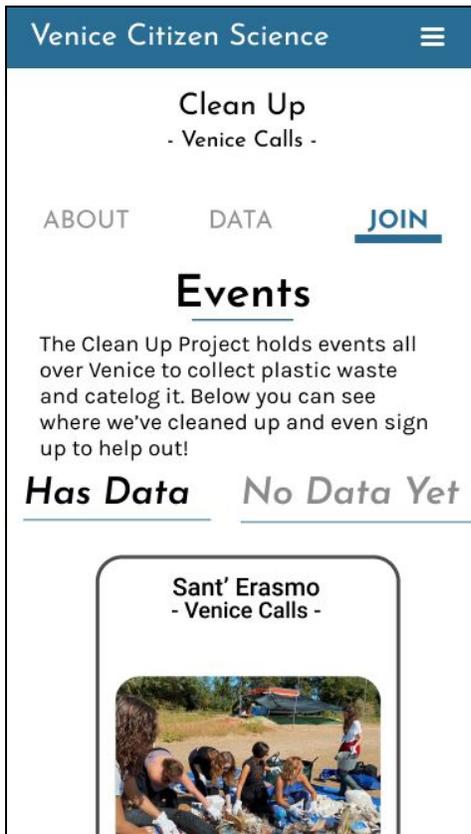
When

September 29, 2020
10:30 am - 1:30 pm

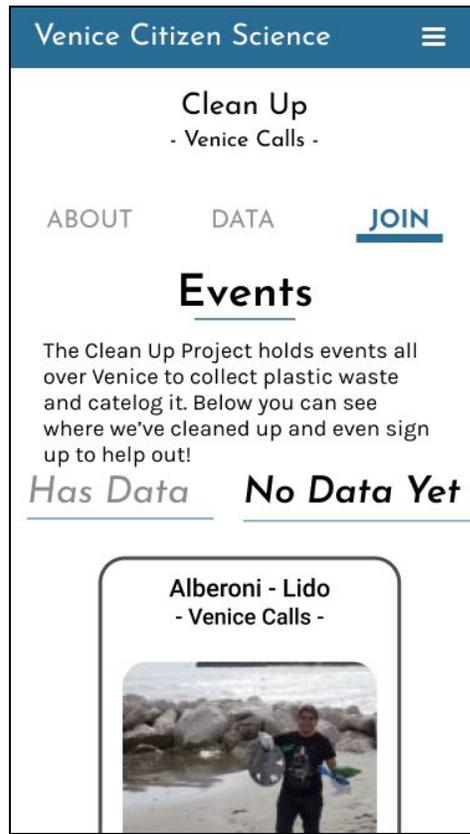
Where

30141 Venezia VE
[Directions via Google Maps](#)

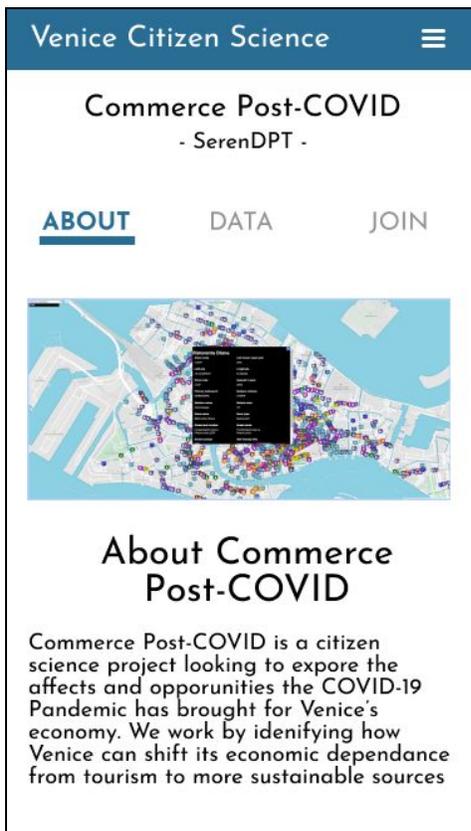
Event “Clean Up” Join Events Page



Event “Clean Up” Join Events Page



Project “Commerce” About Page



Project “Lagoon Eye” About Page

Venice Citizen Science

Lagoon Eye

- Venice Calls -

ABOUT DATA JOIN



About Lagoon Eye

Lagoon Eye is a project to map air pollution, temperature, and sun light all over Venice, Italy. Participants can build sensors from scratch or be sent a pre-built sensor to install outside. Participants offer their wireless internet

Project “Lagoon Eye” Data Page

Venice Citizen Science

Lagoon Eye

- Venice Calls -

ABOUT **DATA** JOIN

Location Map Temperature (°C)



Download as

Dropdown

PNG

PDF

Project “Lagoon Eye” Join Page

Venice Citizen Science

Lagoon Eye

- Venice Calls -

ABOUT DATA **JOIN**

How

Joining is easy! Simply submit your address below and a sensor will be shipped premade! Instructions on how to connect to the internet will be included, and once those are done, it will begin to stream data.

Address:

123 Cranberry St, Venice, Italy

Mail Me a Sensor!

Join The Lagoon Eye Newsletter for Updates:

Project “Venice Call” Organizer Page

Venice Citizen Science

Venice Calls



Email:
info.venicecalls@gmail.com

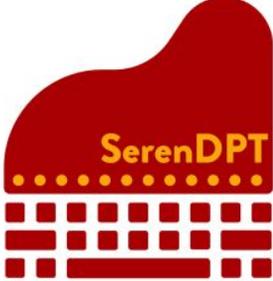
Website:
<https://www.venicecalls.com/>

Mission
Venice Calls wants to give its contribution to creating and supporting new projects with all those realities that pursue a sustainable city model: economically, socially and

Project “SerendPT” Organizer Page

Venice Citizen Science

SerendPT



Email:
contacts@serendpt.net

Website:
<https://serendpt.net/en>

Mission
Founded in 2017, SerendPT is a Benefit Corporation with a clear mission: create high profile job in Venice by developing Made in Venice tech products, in order to solve some of the city's problems in

Community Discussions Page

Venice Citizen Science

Community Discussions

Discussions about the platform and projects can be found on our Facebook group. Click [here](#) to view that group!

Login Page

Venice Citizen Science 

Log in to Venice Citizen Science

[Login with your email](#)

[Don't have an account? Register](#)
[Forgot your password?](#)

 Continue with Facebook

 Sign in with Google

 Sign in with Microsoft

 Sign in with Twitter

Venice Citizen Science Platform

Projects Help Register

Community Calendar Log In

About



User Registration Page

Venice Citizen Science 

Register

[Register with your email](#)

 Continue with Facebook

 Sign in with Google

 Sign in with Microsoft

 Sign in with Twitter

Venice Citizen Science Platform

Projects Help Register

Community Calendar Log In

About



Request Password Reset Page

Venice Citizen Science 

Password Reset

Please enter the email address associated with your account

[Request Password Reset](#)

Venice Citizen Science Platform

[Projects](#) [Help](#) [Register](#)

[Community](#) [Calendar](#) [Log In](#)

[About](#)


VENICE CALLS

Request Sent Page

Venice Citizen Science 

Password Reset Request Sent

You should receive an email to reset your password shortly

Venice Citizen Science Platform

[Projects](#) [Help](#) [Register](#)

[Community](#) [Calendar](#) [Log In](#)

[About](#)


VENICE CALLS

User Registration Confirmation Page

